Trinity College Dublin
Coláiste na Tríonóide, Baile Átha Cliath
The University of Dublin

School of Linguistic, Speech and Communication Sciences

M.Phil. course in
Speech and Language Processing
2016-17/18

Course handbook

This handbook is also available electronically from the SLSCS website: http://www.tcd.ie/slscs/postgraduate/taught-courses/

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Introduction

Speech processing is the science concerned with how speech communication works: how speech is produced by the speaker and understood by the listener. It is also concerned with how these processes can be analysed and modelled, and with how these models can be used to develop technologies that also produce and understand speech (synthetic voices, speech recognisers). The science and technology involved are fundamental to the understanding and remediation of disordered speech. The science of speech is thus at the intersection of many disciplines, particularly linguistics, psychology, acoustics, and engineering.

Language processing, in parallel, deals with computational theories of grammar and meaning, and provides access to fundamentals of linguistics as a science and as an engineering discipline. As a science, it is concerned with the fact that language is used as a medium for thought as well as for communication. As an engineering discipline, it is concerned with tools that work: predictive text in telephones, automated personal assistants, web search, and so on. The fact that you are reading this sentence entails that you have taken advantage of one or more language technologies; it would not be visible to you otherwise. The fact that you understand this

sentence (or any sentence) begs all of the questions of cognitive science such as what "meanings" are and how people reason with them.

A note on this handbook

This handbook applies to all students doing the M.Phil. in Speech and Language Processing. It provides a guide to what is expected of you on this course, and the academic and personal support available to you. Please retain it for future reference.

The information provided in this handbook is accurate at the time of preparation. Any necessary revisions are notified to students via e-mail or by notices on the notice board outside the Centre for Language and Communication Studies (CLCS) office. Please note that in the event of any conflict or inconsistency between the general regulations published in the Calendar of the University of Dublin and the information contained in the course handbook, the provisions contained in the Calendar will prevail.

Learning outcomes

On successful completion of the course, graduates should be able to:
- SLP1: engage in the description and analysis of language
- SLP2: debate central concepts in speech science
- SLP3: debate central concepts in language processing, with particular regard to computational models of language
- SLP4: discuss more advanced topics in speech science or language processing
- SLP5: undertake research in a chosen field of speech science or language processing, having due regard to the ethical, empirical, and theoretical aspects of this research
- SLP6: communicate the results of their research on topics in speech science and language processing through written papers, oral presentations, and other means where appropriate

Staff contributing to the course

Carl Vogel – Associate Professor in Computational Linguistics, Department of Computer Science
    Teaches the module *LI 7870 Advanced Syntactic Theory*. Research interests: linguistic anomaly; formal language theory; constraint-

based theories of syntax and semantics; metaphoricity and genericity in natural language; dialogue; text classification and stylistics.

Ailbhe Ní Chasaide – Professor of Phonetics
Teaches the modules *LI 7874 Speech Production, Hearing, and Perception* and *LI 7867 Laboratory Phonetics and Phonology*. Research interests: experimental investigation of linguistic contrasts, and implications for models of speech production and perception; prosody and voice quality; intonation of Irish and Hiberno-English; text-to-speech for Irish and Hiberno-English.

Christer Gobl – Associate Professor of Speech Science
Teaches the modules *LI 7871 Speech Processing 1: spectral analysis*; *LI 7874 Speech Production, Hearing and Perception*; and *LI 7875 Speech Processing 2: acoustic modelling*. Research interests: the acoustics of speech production; glottal source analysis and modelling; voice quality; auditory/speech perception; vocal expression of emotion; systems for speech analysis/synthesis/ coding; signal processing.

John Saeed – Professor of Linguistics
Teaches the modules *LI7843 Linguistic Typology*, and *LI 7862 Linguistic Pragmatics*. Research interests: relations between grammatical knowledge and pragmatics, information structure, particularly constituent order, focus and topic, Cushitic languages, Irish Sign Language.

Jeffrey Kallen – Associate Professor in Linguistics and Phonetics
Teaches the module *LI 7865 History and Globalisation of English*. Research interests: sociolinguistics; the English language in Ireland; linguistic theory and language variation; the linguistic landscape; bilingualism; discourse analysis; language acquisition.

Breffni O'Rourke – Assistant Professor in Applied Linguistics
Teaches the module *LI 7860 Technology, Language, and Communication*. Research interests: second language acquisition and pedagogy; computers in language learning; language and discourse in computer-mediated communication.

Elaine Uí Dhonnchadha – Assistant Professor in Computational Linguistics
Teaches the module *LI 7864 Corpus Linguistics*. Research interests: Natural language processing applications (e.g. part-of-

speech tagging, parsing, chunking etc.), corpus linguistics, and Irish linguistics.

Lorna Carson – Assistant Professor in Applied Linguistics
Teaches the module *LI 7883 Multilingualism*. Research interests: autonomy in language learning; second language syllabus and course design; sociolinguistics; language and immigration; multilingualism.

Gessica De Angelis – Assistant Professor in Applied Linguistics
Teaches the modules *LI 7857 Language Acquisition* and *LI 7883 Multilingualism*, and the tutorial series *LI 7879 Research Methodology*. *Research* interests: Second and Third Language Acquisition; non-native language influence; bilingualism; multilingualism; language production, Italian and Spanish; quantitative research methods.

Sarah O'Brien – Assistant Professor in Applied Linguistics
Teaches the tutorial series *LI 7879 Research Methodology*.

Irena Yanushevskaya – Research Fellow in Phonetics
Teaches the module *LI 7871 Speech Processing 1: spectral analysis*;. Research interests: Voice source analysis and parameterisation; voice source dynamics in linguistic and paralinguistic functions of prosody; perception of voice quality and communication of affect; cross language/cultural variation in the decoding of vocal expression of emotions; prosodic analysis; segmental phonetics and phonology.

Course administration

ADMISSION
Applicants are normally required to possess a good primary degree or equivalent qualification. Previous knowledge in the area of speech and language processing is not a requirement.
Application for admission should be made through the University's online admissions portal. Links to the portal, as well as further information on general admission requirements, language requirements, application procedures, fees, and other matters, can be found on the web site of the Trinity College Graduate Studies Officesite http://www.tcd.ie/Graduate_Studies/.

DURATION

The course is taken full-time in one calendar year (September to August) or part-time in two calendar years. Only the part-time option is available to students who remain in employment while taking the course.

M.PHIL. COORDINATOR AND SUPPORT SERVICES

The coordinator of the M.Phil. in Speech and Language Processing is Dr. Gessica De Angelis. General questions and problems to do with the course should in the first instance be addressed to him. Students are urged to familiarise themselves with the various student support services that are available to them in College. Details are provided on College websites, notably:

- www.tcd.ie/College_Health/
- www.tcd.ie/disability/, and
- www.tcd.ie/Senior_Tutor/postgraduateadvisory/

ATTENDANCE / KEEPING IN TOUCH

Students are required to attend all components of the course and to comply with all course requirements. A student who is unable to attend because of illness or for any other reason should immediately inform the course coordinator and the relevant lecturer. Students who are persistently absent from their course without explanation may be excluded from the assessment process.

It is the responsibility of students to remain in touch with their supervisor and attend for supervision at mutually agreed times. They should immediately notify their supervisor and the course coordinator if they change their address.

M.PHIL. COURSE COMMITTEE

The course is managed by a coordinator and a CLCS M.Phil. course committee, which manages all M.Phil. courses in CLCS. The committee meets at least once in each teaching term to review the running of the four courses. The committee comprises the following members:

Gessica De Angelis (Course Coordinator) [*as Chair*]
Elaine Uí Dhonnchadha (Head of Discipline – CLCS)
Lorraine Leeson (Director of Research)
Lorna Carson (Postgraduate Director of Teaching and Learning)
Breffni O'Rourke
Four student representatives, one from each of the four M.Phil. courses, elected early in Michaelmas term.

DATES OF TERMS FOR 2016-17
The induction course for all incoming M.Phil. students in CLCS runs during the week beginning 19 September 2016, from 4 p.m. to 6 p.m. Monday to Thursday. Students are expected to attend all sessions.
Michaelmas teaching term 2016 will begin on Monday 26 September. Hilary term 2017 begins on Monday 16 January. Teaching lasts for 12 weeks in each term. Week 12 may be used as a reading week, but students are expected to be available for lectures.
The Research Methodology tutorial series is taught on Wednesday afternoons in Michaelmas term. All full-time students attend the tutorials; part-time students take them in their first year.

COURSE CONTENT
The degree consists of four obligatory core modules and two electives selected from a list of options, as shown below:

Core Modules:
LI 7871   Speech Processing 1: spectral analysis
LI 7872   Formal foundations of linguistic theories
LI 7867   Laboratory Phonetics and Phonology
LI 7873   Computational theories of grammar and meaning

Options:
LI 7865   History and Globalisation of English
LI 7883   Multilingualism
LI 7843   Linguistic Typology
LI 7874   Speech Production, Hearing, and Perception
LI 7870   Advanced Syntactic Theory
LI 7864   Corpus Linguistics
LI 7860   Technology, Language, and Communication
LI 7894   An Ghaeilge mar Mheán Teagaisc
LI 7895   Computer-Assisted Language Learning

TIMETABLE
Each term, **full-time students** take two core modules, one on Monday afternoons and one on Thursday afternoons as timetabled below. They take one elective, which will be on Monday morning or Thursday morning depending on the elective chosen.

Part-time students take one core module each term. In their first year they may choose to take either the Monday core modules (both terms) or the Thursday core modules (both terms). In their second year, they take the remaining two core modules. They take one elective each year, which may be on Monday or Thursday morning in either Michaelmas term or Hilary term.

For exact dates see

Michaelmas term (September-December)

	Monday	Wednesday	Thursday
Morning	[Elective modules]		[Elective modules]
Afternoon	*Speech Processing 1: spectral analysis*	*Research Methodology*	*Formal Foundations of Linguistic Theories*

Hilary term (January-April)

	Monday	Wednesday	Thursday
Morning	[Elective modules]		[Elective modules]
Afternoon	*Laboratory Phonetics and Phonology*		*Computational Theories of Grammar and Meaning*

Areas in which dissertations may be written

COMPUTATIONAL LINGUISTICS AND CORPUS LINGUISTICS

(Carl Vogel, Elaine Uí Dhonnchadha)
Computational linguistics is a cognitive science which attends to formal rigour in linguistic description and processing issues associated with the resulting models. Natural language processing addresses language technology and representational and efficiency concerns of software systems. Topics across subject areas of linguistics can be treated from the perspective of computational linguistics: e.g. morphology, syntax, semantics, pragmatics. Past

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dissertation titles in computational linguistics are available on the internet at http://www.cs.tcd.ie/Carl.Vogel/postgraduatetheses.

Corpus linguistics is a methodology which touches on virtually all areas of Linguistics and Natural Language Processing. Dissertations on corpus based studies from a wide range of topic areas (including text processing and understanding, speech recognition and speech synthesis, development of language processing tools, development of language-learning resources) can be considered.

EXPERIMENTAL PHONETICS/PHONOLOGY

(Ailbhe Ní Chasaide)
This area of research involves the use of instrumental techniques to describe aspects of languages and of speech. The emphasis is descriptive, e.g. the analysis of features of the sound system of a language or a cross-language comparison. However, the descriptive work should also allow for inferences on the mental organization of language. The same instrumental techniques may also be applied to the description and remediation of speech disorders.

SPEECH SCIENCE

(Christer Gobl, Irena Yanushevskaya, Maria O'Reilly)
This area covers a range of topics concerning the description and modelling of speech production as well as the development of techniques that can be used for that end. Ongoing research in the phonetics and speech laboratory is focused particularly on speech analysis methods, modelling of the human voice source/voice quality, and aspects of speech synthesis and perception.

Students may seek permission to write their dissertation in some other area provided that the board of examiners deems it relevant and appropriate.

European Credit Transfer System (ECTS)

The ECTS is an academic credit transfer and accumulation system representing the student workload required to achieve the specified objectives of a study programme. The ECTS weighting for a course module is a measure of student input or workload for that module, based on factors such as the number of contact hours, the number and length of written or oral presentations, class preparation and private study time, laboratory classes, and so on. In Trinity College, one ECTS unit is defined as 20-25 hours of student input. Thus, for example, a 10-credit module is designed to require a total of 200-

250 hours of student input, including class time, reading, and work on assessments.

Each module in the M.Phil. course is weighted at 10 credits; the research dissertation and the preparation that goes with it (including the Research Methodology tutorial series) is weighted at 30 credits. In keeping with College and international norms, the total ECTS weighting for the M.Phil. course is thus 90 credits.

ECTS credits are awarded to a student only upon successful completion of the course year. Students who fail a year of their course will not obtain credit for that year, even if they have passed certain course components.

Module descriptions

An outline description of each course module is given on pp. 10-38. Students should familiarise themselves with this material as they will be required to indicate their choice of options at a specified time **before** the start of the academic year. Books marked as "(**textbook**)" are essential to the module in question and all students will need their own copy. Students are responsible for placing their own book orders with a bookseller of their choice.

MODULES BY BAND AND TERM

Michaelmas term

Core (PM):   Monday: Speech Processing 1: Spectral Analysis
                Thursday: Formal Foundations of Linguistic Theories
Options (AM):   Monday: History and Globalisation of English;
                Multilingualism; An Ghaeilge mar Mheán Teagaisc;
                Thursday: Technology, Language, and
                Communication; Speech Production, Hearing, and
                Perception;

Hilary term

Core (PM):   Monday: Laboratory Phonetics and Phonology
                Thursday: Computational Theories of Grammar and
                Meaning
Options (AM):   Monday: Speech Processing 2: Acoustic Modelling;
                Computer-Assisted Language Learning;
                Thursday: Advanced Syntactic Theory; Corpus
                Linguistics; Linguistic Typology;

LI 7871 Speech processing 1: spectral analysis (Irena Yanushevskaya, Andrew Murphy)

Aims:
The aim of this module is to provide students with an in-depth knowledge of the basic properties of continuous and discrete signals, and of linear time-invariant (LTI) systems, as the basis for spectral analysis of speech signals. Through the theoretical framework of LTI systems, the source-filter model of speech production is explored as well as different types of speech analysis techniques, including the speech spectrograph. A further aim is to introduce students to key digital signal processing techniques for spectral analysis of speech signals, including the Discrete Fourier Transform, Cepstral analysis and Linear Predictive Coding.

Syllabus:
Specific themes addressed within the module include:
- Continuous and discrete signals
- LTI systems
- The Source-filter model of speech production
- The Fourier Transform
- Digital Signal Processing: A/D, D/A, DFT, the Cepstrum, LPC
- Spectral analysis of speech signals

Learning outcomes:
On successful completion of this module the student will be able to:
- Describe the properties of continuous and discrete signals.
- Classify different types of speech signals and describe their general properties in the time and frequency domains.
- Outline the sampling theorem and explain the digitisation process of continuous-time signals and its implications for discrete-time speech processing.
- Describe the properties of linear time-invariant (LTI) systems.
- Define and explain different spectral analysis techniques based on the discrete Fourier transform (DFT) and on linear predictive coding (LPC).
- Apply spectral analysis techniques to the measurement of acoustic speech parameters.

Assessment:
A series of practical exercises, which students carry out during the course, equivalent to 3-4,000 words. Alternatively, an assignment

involving a single, larger task is carried out on a key aspect of the course: in this case, assessment is based on the written report (3-4,000 words) of the assignment.

Suggested readings:

Rosen, S. & P. Howell. 1999. *Signals and Systems for Speech and Hearing.* New York: Academic Press.

Balmer, L. 1997. *Signals and Systems: An Introduction.* New York: Prentice Hall.

Johnson, K. 2003. *Acoustic and Auditory Phonetics.* Oxford: Blackwell.

Ladefoged, P. 2005. *Elements of Acoustic Phonetics.* 3rd ed. Chicago: University of Chicago Press.

LI 7872 Formal Foundations of Linguistic Theories (Carl Vogel)

Aims:

The course is designed to establish competence in foundational mathematical concepts used in contemporary cognitive science and computationally-oriented approaches to linguistic theory. Basic concepts of discrete mathematics are reviewed with attention to their relevance in linguistics: sets, operators, relations, trees, logic, formal language theory. Emphasis is placed on finite recursive specification of infinite formal languages as an idealization of grammar specification for natural languages (each of which is thought to be infinite but managed by finite brains). Natural languages are modelled as uninterpreted sets of grammatical sentences whose internal structural complexity has implications related to constraints on human syntactic processing. Human languages are also modelled via their translation into logical languages supplied with deductive mechanisms supplying representational and denotational semantic analysis. Logical languages within a range of expressivity classes are considered in terms of their syntax, semantics, and inference mechanisms as simulations of human recognition, interpretation, and reasoning with natural language expressions. Thus, the aims of the course are to (i) establish competence with the core concepts and analytical tools, (ii) develop awareness of the range of applicability of the tools and concepts within linguistic theory and cognitive science, (iii) foster confident and fluent use of formal methods in analysing human language and reasoning.

Working methods:
The course relies on lectures and hands-on practice with the formal tools. Self-access practice with the tools is essential. An automated theorem prover is introduced to facilitate specification of formal theories of natural language syntax and semantics within one of the logical languages addressed in the lectures in order to use the theorem prover to test the consequences of theories of language on natural language inputs. Thought-problems designed to test understanding of key concepts will be offered at the end of each session.

Syllabus:
Topics addressed in the module include:
- Sets, characteristic functions, operators, relations
- Languages as sets of sentences
- Propositional logic: syntax, semantics & valid inference
- Deductive inference and human reasoning
- Predicate logic: syntax, semantics & valid inference
- First order logic (FOL): syntax & semantics & valid inference
- Translating natural language utterances into FOL
- Axiomatizing theories in Prolog (Horn Logic).

Learning outcomes:
On successful completion of the module students will be able to:
- Define the basic constructs in discrete mathematics: sets (finite, infinite and impossible), algebraic operations on sets (intersection, union, complement, difference), characteristic functions, relations (e.g. reflexivity, transitivity, symmetry), partial orders, total orders, equivalence classes; properties of trees; propositional logic, predicate logic, first order logic, Horn logic (syntax, semantics, limits and valid inference in each case).
- Demonstrate the relevance to syntax of human languages in idealizing natural languages as infinite sets of grammatical sentences;
- Demonstrate the relevance to syntax of human languages in providing finite recursive definitions for infinite logical languages;
- Demonstrate the relevance to semantics of human languages in providing a compositional denotational semantics (with a syntax-semantics interface) to infinite logical languages;
- Explain how natural language semantics may be represented indirectly using formal logical languages and their model-theoretic semantics;

- Specify clear theories of grammar as axioms in a deductive framework capable of testing theoretical predictions;
- Transfer abstract competence to practical

Assessment:
Students complete a take-home assignment with a mixture of problems intended to elicit demonstration of mastery of core concepts and ability to reason with those concepts in representing relevant phenomena.

Recommended Readings:
Course handouts and sources in their bibliographies.
Partee, B. A. ter Meulen and R. Wall. 1993. *Mathematical Methods in Linguistics*. Dordrecht: Kluwer Academic Press.

LI 7865 History and Globalisation of English (Jeffrey Kallen)
This module has four principal aims: (i) to give an overview of the linguistic history of English, covering the major developments in syntax, phonology, the lexicon, and aspects of the writing system, (ii) to show the relationship between variation within English and the historical development of the language, (iii) to survey the spread of English as a world language, and (iv) to examine world Englishes within the context of social, historical, and linguistic theory. Students are encouraged to provide relevant examples of variation in English from their experience of English as a world language.

Syllabus:
Specific themes addressed in the module include:
- Periods of English: what are 'Old', 'Middle', and 'Modern' English?
- Development and variation in English phonology and spelling
- The development of English morphology and syntax
- The lexicon, word-formation, and lexical expansion in English
- Regional variation in English dialects
- Standardising English
- The spread of English: Scotland and Ireland
- Area studies: English in North America
- Area studies: English-based creoles
- Area studies: English in Africa and Asia
- Issues and problems in global English

Learning outcomes:
On successful completion of the module, students should be able to:
- Outline major stages in the history of the English language

- Compare and contrast varieties of English as a world language
- Analyse models for the diffusion of English and the development of national varieties of English in the context of globalisation
- Develop an appreciation of variation within the English language as a whole
- Apply a critical perspective on the use of English as a mother tongue, language for special purposes, official language, lingua franca, or other code of communication

Assessment:
Students write an assignment of 3,000 to 4,000 words under one of the following headings: (a) a specific problem in the historical development of English, (b) the role of contact between English and another language or languages in a particular variety of English, (c) the development of a national variety of English in a nation-state of the so-called 'outer' or 'expanding' circle, or (d) regional or social variation within a so-called 'inner circle' variety of English.

Suggested readings:

Baugh, Albert C. and Thomas Cable. 2013. *A History of the English Language*. 6th edn. London: Routledge.

Brinton, Laurel J and Leslie Arnovick. 2011. *The English Language: A Linguistic History*. 2nd edition. Oxford: Oxford University Press.

Kachru, Braj B., Yamuna Kachru, and Cecil L. Nelson (eds.). 2009. *The Handbook of World Englishes*. Oxford: Wiley-Blackwell.

Milroy, James and Lesley Milroy. 1999. *Authority in Language*. 3rd edition. London: Routledge.

Schneider, Edgar W. et al. (eds.). 2004. *A Handbook of Varieties of English*. 3 vols. Berlin: Mouton de Gruyter.

Wells, John. 1982. *Accents of English*. 3 vols. Cambridge: Cambridge University Press.

LI 7883 Multilingualism (Gessica De Angelis and Lorna Carson)

Aims:
The goal of this module is to introduce students to ideas and concepts of multilingualism, and to examine situations where three or more languages are present in an individual's language repertoire or speech community. This module takes as its point of departure multilingual individuals (children and adults) and their social context. It has three key themes: (1) to explore concepts and theories in multilingual individuals, communities and societies, (2) to introduce cognitive and acquisitional aspects of multilingualism; and

(3) to assess critically successes and failures in policies to encourage multilingual language learning and use, particularly in education. The module is intended as an introduction to research for students who are considering research on multilingualism in individuals and societies. Whilst drawing on examples from across the world, the module nevertheless has a strong European flavour, with references to the work of the European Union and Council of Europe in language education policy, and case studies drawn from multilingualism in Europe.

Syllabus:
Specific aspects addressed in the module include:
- General issues and concepts in individual and societal multilingualism
- Multilingual language acquisition, the role of prior native and non-native language knowledge in the language acquisition process, multilingualism and cognitive development, crosslinguistic influence
- Multilingual education programmes, tools to encourage multilingual language use and learning, and evaluation/assessment
- Language policy and language education policy in multilingual contexts

Learning outcomes:
On successful completion of this module, students should be able to:
- Analyse general issues and concepts in research on individual and societal multilingualism
- Critically evaluate theory and research relevant to multilingual practices and policies.
- Assess research on acquisitional and cognitive aspects of multilingual language acquisition
- Examine the impact of official language policies on multilingualism
- Critically assess the role of different types of educational systems and policies in affording opportunities for multilingual language learning and use
- Conduct research on multilingualism in the individual and society

Assessment:
The module will involve a site visit to a local example of multilingualism in practice. After this visit, students will write and

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submit a reaction paper (1000-1500 words) which is weighted at 40% towards the mark for the module. At the end of the module each student will submit a research paper (2000-2500 words) weighted at 60% of the final mark.

Suggested readings:
Aronin, L., & Singleton, D. 2012. *Multilingualism*. Amsterdam: John Benjamins.
De Angelis, G. 2007. *Third or Additional Language Acquisition*. Clevedon: Multilingual Matters.
Weber, J.-J., & Horner, K. 2012. *Introducing Multilingualism: A Social Approach*. New York: Routledge.

LI 7860 Technology, Language, and Communication (Breffni O'Rourke)

Aims:
Participants in this module will explore how language and communication are mediated by various technologies, including that of writing. Students will be encouraged to reflect on the relationship between language, communication and technologies on one hand and individual language processing, interactional processes, and the nature of discourse on the other. Lectures, readings and discussions will range over historical, socio-cultural and individual-cognitive levels of analysis as appropriate.

Working methods:
The module will be taught through a combination of lectures and workshop activities.

Syllabus:
Specific themes addressed in the module include:
- The historical development of writing; the properties of writing systems
- The effects of literacy on our perception of language
- The historical and cultural significance of the printing press
- Audio and video technologies
- Computer-mediated communication
- Mobile-phone text messaging
- Digital literacies

Learning outcomes:
On successful completion of the module, a student should be able to
- Explain the key steps in the historical emergence of writing

- Explain, with examples, how each of the major writing systems represents language structure
- Discuss the social, cognitive and linguistic significance of writing itself and of the printing press
- Explain the linguistic differences between spoken and written language
- Discuss the nature of written language as used in several communication technologies
- Analyse the linguistic and discourse structure of linguistic interaction in a number of different communication technologies

Assessment:
Students write an assignment of 3-4,000 words exploring one or more aspects of language and communication as mediated by technologies.

Suggested Readings:

Sproat, R., 2010. *Language, Technology, and Society*. Oxford: Oxford University Press.

Tagg, C., 2015. *Exploring Digital Communication: Language in Action, 1*. Abindgon: Routledge.

Baron, D. E. 2009. *A better pencil: readers, writers, and the digital revolution*. Oxford: Oxford University Press.

Seargeant, P., & Tagg, C. 2014. The language of social media : identity and community on the Internet. Basingstoke: Palgrave Macmillan.

Hutchby, I. 2001. *Conversation and Technology: From the Telephone to the Internet*. Cambridge: Polity.

Crystal, D. 2001. *Language and the Internet*. Cambridge: Cambridge University Press.

Olson, D. R. 1994. *The World on Paper: The Conceptual and Cognitive Implications of Reading and Writing*. Cambridge: Cambridge University Press.

Rogers, H. (2005). *Writing systems: A linguistic approach*. London: Blackwell.

LI 7874 Speech production, hearing, and perception (Maria O'Reilly, Ailbhe Ní Chasaide)

Aims:
This course aims to provide (i) an understanding of the whole process of speech communication, encompassing the speaker and the listener and (ii) an understanding of some of the major models

of production, perception and hearing, and (iii) practical, hands-on, experience in conducting production and perception experiments. Central to the course is an understanding of the acoustic theory of speech production, and of the acoustic characteristics of speech sounds. Speech materials are analysed to illustrate the acoustic properties of speech, provide insight into to the underlying mechanisms of speech production, while also providing a basis for speech perception experimentation. The processes of hearing are dealt with along with the auditory transforms of the acoustic signal. Students are introduced to speech synthesis, and through synthesis based experimentation to the methods that may be used to explore the perceptual correlates of speech sounds.

Syllabus:
Specific themes addressed within the module include:
- Acoustic theory of speech production
- Source filter theory
- Characteristics of the voice source
- Characteristics of the filter: resonance
- Hearing and the auditory system
- Synthesis and its applications in speech perception
- Perception of stops: locus theory
- Categorical perception
- Analysis, synthesis and perception of voice quality

Learning outcomes:
On successful completion of this module, students should be able to:
- explain the process of speech communication
- describe the acoustic theory of speech production and have knowledge of the acoustic properties of speech sounds
- assess some of the competing theories concerning the perception of speech
- conduct speech production or perception experiments
- interpret, present and write up experimental data

Assessment:
The assessment is based on the conducting and writing up of experimental work on a key topic of the course, equivalent to 3-4,000 words.

Suggested readings:

Borden, G. J., K. S. Harris & L. J. Raphael. 2003. *Speech Science Primer: Physiology, Acoustics, and Perception of Speech*. 4th ed. Philadelphia: Lippincott Williams & Wilkins.

Hayward, K. 2000. *Experimental Phonetics*. London: Longman.

Johnson, K. 2003. *Acoustic and Auditory Phonetics*. Oxford: Blackwell.

Kent, R. & C. Read. 2002. *The Acoustic Analysis of Speech*. 2nd ed. Baltimore: Singular Publishing Group.

Moore, B. C. J. 2005. *An Introduction to the Psychology of Hearing*. 5th ed. New York: Academic Press.

LI 7894 *An Ghaeilge mar Mheán Teagaisc* (Neasa Ní Chiaráin - module coordinator) – Both Michaelmas and Hilary Terms

Aims:

This module, which is delivered through the medium of Irish, has three key aims: (i) to enable students to communicate in their subject area through the medium of Irish in a classroom or other context. This will be achieved through autonomous language learning where students reflect upon their own language use; through their planning for situations in which Irish will be used; through monitoring and assessing their own Irish-language proficiency and being pro-active in their language learning; (ii) to familiarise students with resources and technology that can be used for the implementation of subject specific Irish-medium instruction and (iii) to explore in theory and practice the key pedagogical concepts related to target language use, language immersion, and Content and Language Integrated Learning (CLIL).

The module runs over two semesters to facilitate language learning aims. All lectures take place in the first semester. Content for the second semester is available online via Blackboard.

Students taking this module will be required to take an Irish language test (spoken and written) in the week prior to the start of term, to establish their baseline proficiency in order to facilitate the setting of personal language goals. Students will be tested again at the end of the second semester. Please note that assessment of this module focusses on the achievement of personal learning goals rather than on the level of proficiency achieved, i.e. the aim is to instill the need for personal responsibility in language learning and to encourage autonomous and continuous language learning.

Syllabus:
The module *An Ghaeilge mar Mheán Teagaisc* (Irish as a Medium of Instruction), will facilitate students in refining and adapting their language competence to communicate effectively through Irish in a classroom context. It will enable them to acquire and master the relevant and appropriate classroom discourse in Irish, and to become familiar with the theory and practice of pedagogical concepts and educational instruments related to target language use, language immersion, and CLIL.

Specific themes addressed in the module include: 'CLIL' content and language integrated learning (and relating the theory with practice); the theory of teaching through a second language - the Irish context; theories of second language acquisition – how people learn languages & practical implications for a classroom; the concept of language scaffolding, i.e. building on target language competence by focusing on relevant vocabulary; the use of technology in language acquisition; the concept of autonomous language learning; the concept of reflective practice; the use of self, peer and instructor feedback in setting goals, designing curricular components for targeted subjects through Irish, implementing and delivering same; the theory and practice of needs analysis in language learning and curricular design and implementation.

Learning outcomes:
On successful completion of this module students will be able to:
- Apply techniques and theories learned in class in order to design, develop and deliver subject specific content through the medium of Irish
- Develop and apply practical techniques for developing language learner autonomy
- Engage in language needs analysis for specific cohorts and targeted learning goals
- Draw from and synthesise theories of second language acquisition during lesson preparation and delivery
- Exploit available Irish language resources and technology for both content and language learning
- Show increased proficiency and confidence in using Irish as a medium of instruction

Assessment:
Michaelmas Term

Language Learning Portfolio (20%)
Presentation(s) (30%)
<u>Hilary Term</u>
Online Forum (10 %)
Written assignment / case study (40% max. 1500 words)

Suggested readings

Ellis, R. & Shintani, N. 2014. Exploring Language Pedagogy through Second Language Acquisition Research. Routledge (Textbook)

Little, D. 2006. The Common European Framework of Reference for Languages: contents, purpose, origin, reception and impact. Language Teaching 39.3, pp. 167–90.

Long, M. H. (ed.) 2005. Second Language Needs Analysis. Cambridge: Cambridge University Press

Harris, J. & Ó Duibhir (2011) Múineadh éifeachtach teangacha: Sintéis ar thaighde, BÁC: NCCA.

Ruiz de Zarobe, Y., & Jiménez Catalán, R.M. (2009) Content and Language Integrated Learning: Evidence from Research in Europe. Clevedon: Multilingual Matters.

Ó Laoire, M. & Ní Chlochasaigh, K. (2010) Dea-fhoghlaimeoirí teanga i mbun foghlama. Cad iad na bealaí éifeachtacha foghlama a bhíonn acu? Teagasc na Gaeilge 9, 47-57.

LI 7879 Research methodology (Gessica De Angelis, Sarah O'Brien)

Aims:

This tutorial series is an obligatory part of the preparation for the dissertation and has three principal aims: (i) to equip students with the knowledge and skills necessary to critically evaluate published research and to explore different ways of translating research questions in quantitative or qualitative studies; (ii) to introduce the basic concepts, experimental designs and statistical procedures needed to execute research; and (iii) to provide hands-on experience in using the statistical package SPSS to carry out data analysis in linguistics, ELT, applied linguistics and speech and language processing. Training in SPSS will include data entry, presentation of results and the use of the package to conduct statistical tests to check for relationships among groups. Among the statistical tests introduced are Chi-square, Pearson correlation and t-tests (paired and independent).

Working methods:
The topics in the part of the series on research methods and experimental design (Sarah O'Brien) are presented in lectures and explored and discussed in class. The statistics sessions (Gessica De Angelis) are composed of a lecture followed by a lab session in which there will be an opportunity for students to implement what they have learned about statistics and SPSS.

Syllabus:
Specific themes addressed in the tutorials include:
- Qualitative versus quantitative approaches to research
- Descriptive and exploratory research
- Design and analysis of surveys
- Research ethics
- Questionnaire design
- Advantages of a mixed-method approach to data collection interviews and focus groups
- Observation and field research
- Talk-aloud, retrospective and stimulated recall tasks
- Sampling issues in qualitative research/case studies
- Qualitative data analysis (coding and data reduction)
- Descriptive and inferential statistics
- Levels of measurement
- Measures of central tendency and dispersion
- Frequency distributions, the null hypothesis and error types
- Confidence intervals/statistical significance
- Parametric and non-parametric tests to check for a) relationships and b) differences between groups/variables

When students have completed this tutorial series, it is expected that they will:
- Have a thorough understanding of the different qualitative and quantitative approaches to research and to the design of experiments in linguistics and applied linguistics
- Be familiar with topics such as quasi-experimental research, the structure and content of a typical research article and programme evaluation
- Be familiar with the basis concepts of sampling and statistics and understand how to interpret the more common parametric and non-parametric tests
- Be able to enter, modify, analyse, present and interpret data output and results from SPSS

- Be able to use SPSS to present data summaries in visual form.
- Be able to communicate findings and present results from experimental studies
- Be able to interpret and critically evaluate published research findings.

Suggested Readings:

Cohen, L, Manion, L & Morrison, K. (2011) *Research methods in education*. Oxon, UK: Routledge.

Coolican, H. (2004) *Research methods and statistics in psychology. London:* Hodder and Stoughton.

Field, A. (2009). *Discovering Statistics using SPSS.* (3rd Ed.) London: Sage Publications.

Gass, S. & A. Mackey (eds.) (2012) *Research Methods in Second Language Acquisition*. Oxford: Wiley-Blackwell.

HILARY TERM

LI 7867 Laboratory Phonetics and Phonology (Ailbhe Ní Chasaide)

Aims:

This course introduces students to the laboratory investigation of the segmental and prosodic systems of languages. It provides a practical training in specific analytic techniques: although the primary focus is on acoustic analysis methods, students are also introduced to other analysis techniques, which involve articulatory and (time permitting) aerodynamic data.

The course focusses on a series of experimental tasks associated with key aspects of linguistic structure, in order to provide an understanding of (i) the primary phonetic dimensions of speech generation, (ii) how these phonetic dimensions are exploited in the sound systems of different languages, and (iii) the interactions of phonetic and phonological factors in determining the sound systems of languages.

Syllabus:

The course is delivered in terms of a number of topics, each of which explores some aspect of the human speech production capacity. With each topic the student is required to carry out and write up a practical analytic task, which serves to focus on how different languages exploit this dimension in their sound systems. Analysis techniques can include spectrography, pitch extraction, electropalatography and airflow transduction (oral and nasal). The

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topics which are the basis for analysis are a selection from the following:

- Voice production, including: how voice is generated; how voice is used in spoken communication; a cross-language perspective on phonological voicing contrasts
- Source Filter in speech production
- Vowel systems
- Lingual articulation of consonants: secondary articulation and gestural overlap
- Coarticulation, including cross-language differences in lingual coarticulation and phonological constraints on coarticulation.
- Prosody: phonetic dimensions and their use in linguistic systems

Learning outcomes:
On successful completion of the module students will be able to:
- explain the interplay between the production of speech and the structural characteristics of sound systems
- analyse the cross language diversity in phonetic/phonological systems
- demonstrate basic skills in empirical analysis of speech data, including the selection of techniques appropriate to analyse particular issues; how the data are recorded; and knowledge of how the data are represented, segmented, and interpreted for linguistic analysis.
- present and write up experimental data

Assessment:
Assessment is based on a written assignment of 3-4,000 words which expands on one of the experimental tasks undertaken during the course.

Suggested Readings:
Ladefoged, P. 2005. *Elements of Acoustic Phonetics*. 3rd ed. Chicago: University of Chicago Press.
Hayward, K. 2000. *Experimental Phonetics*. Harlow: Longman.
Gobl, C and Ní Chasaide, A. 2010. *Voice Source Variation and its Communicative Functions*. In Hardcastle, W., J. Laver & F. Gibbon, *The Handbook of Phonetic Sciences*. 2nd ed. Oxford: Wiley-Blackwell.
Ladefoged, P. and K. Johnson. 2011. *A Course in Phonetics*. New York: Harcourt Brace Jovanovich.

Johnson, K. 2002. *Acoustic & Auditory Phonetics*. 2nd ed. Oxford: Blackwell.

Ladd, D.R. 2006. *Intonational Phonology*. Cambridge: Cambridge University Press.

Cruttenden, A. 1986. *Intonation*. Cambridge: Cambridge University Press

Fry, D. 1979. Acoustic features of English Consonants. In *The physics of speech*. Cambridge: Cambridge University Press.

Catford, J. 1977. *Fundamental Problems in Phonetics*. Bloomington: University of Indiana Press

LI 7873 Computational Theories of Grammar and Meaning (Carl Vogel)

Aims:

The module presents computational linguistics as a cognitive science, with focus on formal syntax, formal semantics and computational morphology. The module aims to (i) develop participants' abilities to describe natural language phenomena with computationally oriented grammars that model natural language parsing, generation, and construction of semantic representation in a deductive logical setting; (ii) apply the tools of formal language theory to analysing the syntactic complexity of human languages in its syntax and morphology with reference to ramifications for human language processing; (iii) develop skill in grammar development for extensive fragments of natural language encompassing important syntactic domains: complex noun phrase structure, relative clauses, arguments and adjuncts, embedding verbs, topic-focus constructions and questions.

Working methods:

The module depends partly on lectures and partly on hands-on practice with the formal tools. Self-access practice is essential. Prolog is used as a theorem prover in which to develop definite clause grammars for recognizers, parsers, and constructors of semantic representations for natural language utterances. A grammar for a fragment is constructed iteratively and evaluated against test suites, with considerable focus on unbounded dependency constructions.

Syllabus:

• Basics of definite clause grammars applied to recognizing natural language
• DCGs with parsing and semantic construction

- DCGs and complement subcategorization frames
- Formal language theory and the complexity of natural language syntax
- Unbounded dependency constructions
- Parsing, interpreting and answering questions
- Formal language theory

Learning outcomes:
On successful completion of the module students will be able to:
- Operate as grammar developers capable of working within syntactic description or formal semantic analysis;
- distinguish the relationship between the Chomsky hierarchy of expressivity of formal languages, grammars that generate those languages, and the formal expressivity of natural language syntax;
- analyse the human language processing ramifications of formal language theory;
- transfer formal language theory to the representation of natural language morphology.

Assessment:
A fragment grammar will be evaluated with respect to its coverage of a test suite of sentences. Training test suites will be provided covering the essential constructs, and success of the suite will be measure by its coverage of a suite of unseen constructions drawn on the same terminal vocabulary. Discursive text provided with the grammar will address ways in which the test suite could be reasonably be expanded, and evaluate the adequacy of the grammar in covering the test suite with respect to the criteria developed throughout the course.

Recommended Readings:
Nugues, Pierre M. 2006. An Introduction to Language Processing with Perl and Prolog. Berlin: Springer.
Course handouts and sources in their bibliographies

LI 7875 Speech Processing 2: Acoustic Modelling (Christer Gobl)

Aims:
The aim of this module is to provide students with an understanding of the acoustics of speech production and with knowledge about the signal analysis and processing techniques required to model the speech production process for the purpose of generating synthetic speech.

Syllabus:
A theoretical framework is developed whereby students are introduced to the Laplace transform and the s-plane, the *z* transform and the *z*-plane, as well as techniques for the design of digital filters. A further aim is to introduce students to different speech synthesis methodologies which may be used in text-to-speech systems, including parametric, concatenative, and articulatory approaches.

Specific themes addressed within the module include:
- Speech acoustics
- The Source-Filter model of speech production
- The Laplace transform / The z-transform / Impulse invariant transformation
- First and second order filters
- Parametric, concatenative and articulatory methods for speech synthesis and methods for text-to-speech conversion
- Cascade and parallel formant synthesis

Learning outcomes:
On successful completion of this module, students will be able to:
- Explain the fundamentals of speech acoustics.
- Demonstrate how the speech signal can be modelled in terms of source and filter.
- Design and use discrete-time filters for modelling the acoustics of the vocal tract, by applying techniques involving the Laplace, z- and filter transforms.
- Perform time and frequency domain analysis of cascade and parallel vocal tract models.
- Develop a basic formant synthesiser

Assessment:
Students carry out an assignment involving the design and implementation of acoustic models of speech production. Students are assessed on their implementations and written report of the assignment.

Suggested readings:
Johnson, K. 2003. Acoustic and Auditory Phonetics. Oxford: Blackwell.
Rosen, S., & P. Howell. 1999. Signals and Systems for Speech and Hearing. New York: Academic Press.
Quatieri, T. F. 2002. Discrete-Time Speech Signal Processing: Principles and Practise. Englewood Cliffs, NJ: Prentice Hall.

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Holmes, J. & W. Holmes. 2001. Speech Synthesis and Recognition. London and New York: Taylor and Francis.

Dutoit, T. 1997. An Introduction to Text-to-Speech Synthesis. Dordrecht: Kluwer.

LI 7870 Advanced Syntactic Theory (Carl Vogel)

Aims

The course should provide students with practice in addressing recent literature in syntax and the syntax-semantics interface, leading to the possibility of contributing to that literature.

Working methods

Participants will digest and present articles, and in doing so will hone abilities in extracting the theoretical relevance of published articles and sharpen competence in providing constructive critique of the claims, methods and argumentation adopted. Readings will draw upon chapters from the readings list, a number of related articles to be announced, partly determined by the prior background of each participant.

Syllabus

Many semantic categories have graded structure; for example, in terms of membership, a piano is less clearly a piece of furniture than a desk is. In contrast, the primitive categories of syntactic theories are generally discussed as if the membership criteria offer clear binary distinctions. Linguistic categories will be examined with respect to their underlying structure. The relationships among graded categories, degrees of grammaticality and linguistic innovation will be explored. The analysis will be conducted with respect to the background linguistic frameworks like Head-driven Phrase Structure Grammar and Lexical Functional Grammar, with reference to the Minimalist paradigm, and will be informed by recent work in cognitive science and corpus linguistics.

Specific topics addressed in the module include:
- Atomic categories in linguistic theories
- Gradience in cognition
- Gradience in linguistic categories
- Argument structure and the syntax/semantics interface
- 'quirky case'
- Degrees of grammaticality and eliciting grammaticality judgements
- Linguistic innovation vs. error

- Corpus-driven and computational methods of detecting category change

Learning outcomes
On successful completion of this module students should be able to:
- Critically discuss recent literature in advanced syntactic theory
- Discriminate contrasting features of presentation of novel research about syntax used within psycholinguistics, theoretical syntax, or computational approaches to syntactic theory
- Critically evaluate the concepts and theories addressed in the module
- Develop arguments in linguistic theory in line with standard practice in the field

Assessment
The course result will be based partly (90%) on the evaluation of a 3 to 4,000 word essay connected to the theme addressed within the course, the literature addressed specifically in the seminar, and secondary literature on the topic, synthesizing the material addressed. The other part of the evaluation will be determined by submission of short summaries of each of the works read and discussed during the module (10%).

Recommended readings
Aarts, B. 2007. Syntactic Gradience: The Nature of Grammatical Indeterminacy. Oxford: Oxford University Press.
Aarts, B. et al. 2004. *Fuzzy Grammar: A Reader*. Oxford: Oxford University Press.
Baker, M.C. 2003. *Lexical Categories: Verbs, Nouns, and Adjectives*. Cambridge: Cambridge University Press.Sag, Ivan A.,
Sag, Ivan A., Thomas Wasow, and Emily M. Bender. 2003. *Syntactic Theory: A Formal Introduction*. 2nd ed. Stanford, CA: CSLI.

LI 7843 Linguistic Typology (John Saeed)

Aims:
The module's mains aims are (i) to introduce students to the study of the structural similarities and differences between the languages of the world; (ii) to familiarize students with the principles of research in linguistic typology, including how representative language samples are established; (iii) to give students experience of the practical analysis of cross-linguistic patterns that are found in

phonology, morphology and syntax; and (iv) to familiarize students with the tasks of formulating and evaluating typological argumentation.

Syllabus:
The module topics include the genetic classification of languages, phonological inventories, word order, word classes, case marking, classication systems, ergativity, complex predication, and spatial language and lexicalization. The module also covers methodology and sampling. An important element is weekly exercises in the typological decription of languages unfamiliar to the students.

Learning outcomes:
On successful completion of this module students should be able to:
- Describe in detail the basic theoretical framework for the systematic analysis of language diversity
- Apply the tools of typological analysis to genetically unrelated languages
- Explain how competing claims about cross-linguistic structural properties may be evaluated
- Analyse how typological analysis relates to historical linguistics, areal linguistics and language contact.

Assessment:
Students write an assignment of 4,000 words.

Suggested readings:
Moravcsik, Edith A. 2013. *Introducing Language Typology. Cambridge: Cambridge University Press.* **(Textbook)**
Comrie, B. 1989. *Language Universals and Linguistic Typology: Syntax and Morphology*. Chicago: University of Chicago Press.
Croft, W. 2002. *Typology and Universals*. (2nd ed.) Cambridge: Cambridge University Press.
Dryer, M. S. & M. Haspelmath. (eds.) 2013. *The World Atlas of Language Structures Online*. Leipzig: Max Planck Institute for Evolutionary Anthropology. At http://wals.info
Payne, T.E. 2006. *Exploring Language Structure: A Student's Guide.* Cambridge: Cambridge University Press.
Shopen, Timothy (ed.) 2007. *Language Typology and Syntactic Description*. Three volumes. Second edition. Cambridge: Cambridge University Press.
Song, Jae Jung. 2001. *Linguistic Typology: Morphology and Syntax*. Harlow: Longman.

Song, Jae Jung (ed.) 2011. *The Oxford Handbook of Linguistic Typology*. Oxford: Oxford University Press.

LI 7864 Corpus Linguistics (Elaine Uí Dhonnchadha)

Aims:

A corpus consists of a large body of language samples (written / spoken / signed / gestural) which are held electronically in text, audio and/or video form. Corpora can be used to provide evidence for linguistic research (in syntax, morphology, stylistics, pragmatics etc.); they can be used in historical and sociolinguistic studies; they can be used to generate authentic language teaching materials and language testing materials; and they are used in the generation and testing of speech and language processing tools.

This module will introduce students to the principles of corpus creation (i.e. design, collection, and annotation), and students will gain experience of using various types of corpora, corpus query tools, and corpus annotation tools.

Syllabus:

The module will cover:
- Corpus design, and collection and preparation of corpus materials
- Various levels of linguistic annotation, e.g. part-of-speech, phrase structure, phonetic, prosodic, gesture etc.
- Manual and automatic annotation, and evaluation/verification methods
- Use of corpora in Theoretical and Applied Linguistic Research, and in Language Teaching/Learning
- In the Lab, various types of corpora and corpus query tools such as WordSmith, SketchEngine, Transcriber, ELAN, Praat, Anvil, ICECup, TigerSearch, CHAT/Child etc.

Learning Outcomes:

On successful completion of the module, students will be able to:
- Identify the benefits and limitations of using corpora in various linguistic domains.
- Analyse the requirements and formulate a corpus creation plan
- Examine the current annotation standards and tools and select/develop appropriate standards and annotation tools for the particular research task
- Use of various types of corpora and corpus query tools.

Assessment:
Assessment for this module, amounting to approximately 3-4,000 words, will consist of a written assignment on an aspect of corpus development and/or use.

Suggested Readings:
Relevant papers are handed out each week.

Developing Linguistic Corpora: a Guide to Good Practice. http://www.ahds.ac.uk/creating/guides/linguistic-corpora/index.htm

Adolphs, A. 2006. *Introducing electronic text analysis: a practical guide for language and literary studies.* London : Routledge.

Hoffmann, Sebastian et al. 2008. *Corpus linguistics with BNCweb - a practical guide.* Oxford: Peter Lang.

O'Keeffe, Anne and McCarthy, Michael (eds.) 2010. *The Routledge Handbook of Corpus Linguistics.* London: Routledge.

McEnery, T., R. Xiao and Y. Tono 2006. *Corpus-based Language Studies.* London: Routledge.

Hunston, Susan 2002. *Corpora in Applied Linguistics.* Cambridge University Press

Abeillé, A. 2003. *Treebanks: Building and Using Parsed Corpora.* London: Kluwer.

Sinclair, John M. 2004. *Trust the Text: Language, Corpus and Discourse.* London: Routledge.

Meyer, Charles F. 2002. *English Corpus Linguistics.* Cambridge: Cambridge University Press.

Biber, Douglas, Susan Conrad, and Randi Reppen. 1998. *Corpus Linguistics: Investigating Language Structure and Use.* Cambridge: Cambridge University Press.

Renouf, A. and A. Kehoe. 2006. *The Changing Face of Corpus Linguistics.* Amsterdam: Rodopi

LI 7894 *An Ghaeilge mar Mheán Teagaisc* (Neasa Ní Chiaráin - module coordinator) – Both Michaelmas and Hilary Terms

Aims:
This module, which is delivered through the medium of Irish, has three key aims: (i) to enable students to communicate in their subject area through the medium of Irish in a classroom or other context. This will achieved through autonomous language learning where students reflect upon their own language use; through their planning for situations in which Irish will be used; through monitoring and assessing their own Irish-language proficiency and

being pro-active in their language learning; (ii) to familiarise students with resources and technology that can be used for the implementation of subject specific Irish-medium instruction and (iii) to explore in theory and practice the key pedagogical concepts related to target language use, language immersion, and Content and Language Integrated Learning (CLIL).

The module runs over two semesters to facilitate language learning aims. All lectures take place in the first semester. Content for the second semester is available online via Blackboard.

Students taking this module will be required to take an Irish language test (spoken and written) in the week prior to the start of term, to establish their baseline proficiency in order to facilitate the setting of personal language goals. Students will be tested again at the end of the second semester. Please note that assessment of this module focusses on the achievement of personal learning goals rather than on the level of proficiency achieved, i.e. the aim is to instill the need for personal responsibility in language learning and to encourage autonomous and continuous language learning.

Syllabus:

The module *An Ghaeilge mar Mheán Teagaisc* (Irish as a Medium of Instruction), will facilitate students in refining and adapting their language competence to communicate effectively through Irish in a classroom context. It will enable them to acquire and master the relevant and appropriate classroom discourse in Irish, and to become familiar with the theory and practice of pedagogical concepts and educational instruments related to target language use, language immersion, and CLIL.

Specific themes addressed in the module include: 'CLIL' content and language integrated learning (and relating the theory with practice); the theory of teaching through a second language - the Irish context; theories of second language acquisition – how people learn languages & practical implications for a classroom; the concept of language scaffolding, i.e. building on target language competence by focusing on relevant vocabulary; the use of technology in language acquisition; the concept of autonomous language learning; the concept of reflective practice; the use of self, peer and instructor feedback in setting goals, designing curricular components for targeted subjects through Irish, implementing and delivering same; the theory and practice of needs analysis in language learning and curricular design and implementation.

Learning outcomes:
On successful completion of this module students will be able to:
- Apply techniques and theories learned in class in order to design, develop and deliver subject specific content through the medium of Irish
- Develop and apply practical techniques for developing language learner autonomy
- Engage in language needs analysis for specific cohorts and targeted learning goals
- Draw from and synthesise theories of second language acquisition during lesson preparation and delivery
- Exploit available Irish language resources and technology for both content and language learning
- Show increased proficiency and confidence in using Irish as a medium of instruction

Assessment:
Michaelmas Term
Language Learning Portfolio (20%)
Presentation(s) (30%)
Hilary Term
Online Forum (10 %)
Written assignment / case study (40% max. 1500 words)

Suggested readings
Ellis, R. & Shintani, N. 2014. Exploring Language Pedagogy through Second Language Acquisition Research. Routledge (Textbook)
Little, D. 2006. The Common European Framework of Reference for Languages: contents, purpose, origin, reception and impact. Language Teaching 39.3, pp. 167–90.
Long, M. H. (ed.) 2005. Second Language Needs Analysis. Cambridge: Cambridge University Press
Harris, J. & Ó Duibhir (2011) Múineadh éifeachtach teangacha: Sintéis ar thaighde, BÁC: NCCA.
Ruiz de Zarobe, Y., & Jiménez Catalán, R.M. (2009) Content and Language Integrated Learning: Evidence from Research in Europe. Clevedon: Multilingual Matters.
Ó Laoire, M. & Ní Chlochasaigh, K. (2010) Dea-fhoghlaimeoirí teanga i mbun foghlama. Cad iad na bealaí éifeachtacha foghlama a bhíonn acu? Teagasc na Gaeilge 9, 47-57.

LI 7895 *Computer-Assisted Language Learning: Design, Implementation and Evaluation* **(Neasa Ní Chiaráin)**

Aims:

This module combines both theory and practice and sets out to equip students with practical experience and skills as well as a theoretical understanding of how to design, implement and evaluate Computer-Assisted Language Learning applications. The emphasis throughout is on encouraging interdisciplinary collaboration among the students and on project-based group learning. The principal focus is on CALL development for Irish language instruction but content development for other languages is also possible. Specific aims are to: (i) enable students from different (technical, pedagogical and linguistic) backgrounds to develop their skills as well as a broad understanding of CALL as an interdisciplinary field, (ii) to familiarise students with some pedagogical considerations and second language acquisition theory that should ideally guide the development of CALL, (iii) familiarise students with a range of speech and language technologies that can be deployed in CALL (iv) provide students with practical skills in the design/development of CALL content, (v) provide students with practical skills in the implementation of CALL content, (vi) provide students with practical skills in the evaluation of CALL content and (vii) give students, where possible, hands on experience of working as part of a multidisciplinary team in order to create their own prototype digital materials

Syllabus:

This module introduces students to current Computer-Assisted Language Learning (CALL) resources and presents an overview of current major trends in CALL research. In this context, ongoing CALL research on Irish in the School is presented. A brief overview of essential theoretical considerations is presented and discussion includes the fundamental place of second language acquisition and pedagogical theory in the design of CALL content. The specific language context and the sociocultural context of the language learner is another fundamental consideration that is here briefly reviewed along with the need to identify clear linguistic goals in CALL design.

The implementation of CALL design in terms of specific linguistic content or of a platform design, etc. is undertaken as group work

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and the emphasis throughout is on maximising the interdisciplinary collaboration of students with different backgrounds and skills. Attention is also directed at how CALL materials can be evaluated. The module will encourage students to develop interactive and innovative CALL platforms which may make a significant contribution to the use of new language teaching methodologies in which technology can play a very significant role. The impact of the module may be significant in disseminating interactive CALL materials into schools.

Learning outcomes:
On successful completion of this module students will be able to:
(1) explore how language structure as well as language acquisition and pedagogical theory should ideally be used as a foundation for CALL design;
2) describe how concepts, models and resources from speech and language sciences can be exploited to design powerful learning environments for CALL;
3) engage in implementation of CALL resources/materials that exploit speech and language models and technologies;
4) discuss suitable evaluation frameworks for speech and language-based CALL applications;
5) undertake research in either design or implementation of digital materials for CALL;
6) communicate the results of this research through presentation and through a written account. This should, where appropriate, include supplementary materials/content developed

Assessment:
Module assessment will take the form either of (1) a prototype technical development, (2) the design of a technical development, (3) content development or (4) a review of theoretical issues surrounding CALL development. This will be examined through an oral presentation (25%) and through a written account, which includes, where appropriate, any supplementary materials/content developed, such as a web-based tool/educational program/language learning materials or platform (75%).

Suggested readings
Materials are developed and tailored specifically for the course. Relevant material will be provided in and through Blackboard: e-books, e-journal articles and online materials are typically used in combination with lectures.

The indicative reading list for this module includes:

Beatty, K. (2003). Teaching and researching computer-assisted language learning. New York: Longman.

Chapelle, C. (2001). Computer applications in second language acquisition: Foundations for teaching, testing, and research. Cambridge: Cambridge University Press.

Handley, Z. (2009). Is text-to-speech synthesis ready for use in computer- assisted language learning? Speech Communication, 51, 906–919. doi:10.1016/j.specom.2008.12.004

Little, D. (2007). Language learner autonomy: Some fundamental considerations revisited. Innovation in Language Learning and Teaching, 1, 14–29. doi:10.2167/illt040.0

Long, M. H. (1996). The role of the linguistic environment in second language acquisition. In W. C. Ritchie & T. K. Bhatia (Eds.), Handbook of research on language acquisition: Second language acquisition. (Volume 2., pp. 413– 468). San Diego, CA: Academic Press.

Ní Chiaráin, N. (2014). Text-to-Speech Synthesis in Computer-Assisted Language Learning for Irish: Development and Evaluation. (Doctoral thesis, CLCS, Trinity College, Dublin).

Ní Chiaráin, N., & Ní Chasaide, A. (2015). Evaluating Synthetic Speech in an Irish CALL Application: Influences of predisposition and of the holistic environment. In S. Steidl, A. Batliner, & O. Jokisch (Eds.), SLaTE 2015: 6th Workshop on Speech and Language Technologies in Education (pp. 149–154). Leipzig, Germany

Assessment

METHOD

Students are assessed on the basis of their performance in

- six assignments related to four core and two optional modules of the course (10 credits each, total 60 credits)
- a dissertation (30 credits)

All modules and the dissertation are weighted according to their ECTS credit value. The pass mark of 40% applies to all module assignments; the dissertation is graded on a pass/distinction/fail basis. To qualify for the award of the M.Phil. degree, students must (i) obtain an average of at least 40% over all taught modules, (ii) obtain a pass grade in the dissertation, and (iii) either pass modules amounting to 60 credits, or pass modules amounting to at least 50

credits where there is a mark of not less than 30% in the failed module. As provided for by College regulations, a student who receives a fail mark may be allowed to resubmit an assignment if there are mitigating circumstances; *the student should consult the course coordinator in the first instance, as soon as possible after receipt of the grade in question.*

PROGRESSION TO DISSERTATION

The court of examiners may debar students from writing and submitting a dissertation (i) if they fail to submit a detailed plan and work schedule for their dissertation by 9 May (in their first year if they are taking their course part-time), or (ii) if they fail to achieve at least a II.2 grade in each of their assignments. Provided that they satisfy the examiners in respect of their course work, such students may be awarded a Postgraduate Diploma in Speech and Language Processing (see above).

M.PHIL. WITH DISTINCTION

Students may be awarded the M.Phil. with Distinction if they (i) pass all modules; (ii) achieve a Distinction in the dissertation; (iii) achieve at least 68% in the unrounded overall average mark for the taught modules; and (iv) achieve at least 70% in each of three course modules.

AWARD OF DIPLOMA

Students may decide for personal reasons not to write a dissertation, or they may be debarred from doing so by the court of examiners (see above). Provided that they satisfy the examiners in respect of their course work, such students will be awarded a Postgraduate Diploma in Speech and Language Processing. The Postgraduate Diploma with Distinction may be awarded to candidates who (i) have passed all modules, (ii) have an overall average mark of 68% or above and (iii) have a mark of at least 70% for each of three course modules.

Academic standards in student work

RESEARCH ETHICS

Students are given guidelines with regard to research ethics. Students doing individual research, e.g. for the dissertation, must ensure that they have complied with School regulations on obtaining ethical approval for this research. Where approval from the School's Research Ethics Committee is required, students are responsible for

ensuring that they obtain it in a timely manner. Further information is available at http://www.tcd.ie/slscs/research/ethics/.

ATTRIBUTION AND PLAGIARISM

All quotations from published and unpublished sources *must* begin and end with quotation marks and be accompanied by a full reference (see below). ***The following practices are unacceptable and will be treated as plagiarism***:

- copying without acknowledgement;
- selective copying (which omits words, phrases or sentences from the original) without acknowledgement;
- close summary without acknowledgement

No student found guilty of plagiarism will be (i) awarded a degree or diploma or (ii) supported in applications for admission to other courses of study either at Trinity College or elsewhere.

To ensure that you have a clear understanding of what plagiarism is, how Trinity deals with cases of plagiarism, and how to avoid it, you will find a repository of information at http://tcd-ie.libguides.com/plagiarism

We ask you to take the following steps:

(i)   Visit the online resources to inform yourself about how Trinity deals with plagiarism and how you can avoid it at http://tcd-ie.libguides.com/plagiarism . You should also familiarize yourself with the 2015-16 Calendar entry on plagiarism located on this website and the sanctions which are applied;

(ii)   Complete the 'Ready, Steady, Write' online tutorial on plagiarism at http://tcd-ie.libguides.com/plagiarism/ready-steady-write. **Completing the tutorial is compulsory for all students.**

(iii)   Familiarise yourself with the declaration that you will be asked to sign when submitting course work at http://tcd-ie.libguides.com/plagiarism/declaration

(iv)   Contact your College Tutor, your Course Director, or your Lecturer if you are unsure about any aspect of plagiarism.

Plagiarism is a serious disciplinary offence: see also the College regulations on plagiarism printed at the end of this handbook.

Please note that all instances of Plagiarism will be recorded as part of your Student Academic History.

REFERENCES

Students should ensure that they follow good academic practice in the presentation of essays and other written work. In assignments and dissertations references should be given in the main body of the text, giving the author and year of publication of the material being cited. Specific page references must be given for quotations. Using the 'author/date' system yields references such as:

Bialystok (2001) [for reference to a work as a whole]
Coleman (2002, p. 115) [for reference to one page in a work]
Tonhauser (2007, pp. 838-841) [for reference to several pages]

A complete alphabetical list of references must be included at the end of each piece of work. Each type of work cited (book, article in a book, article in a journal, etc.) has a particular format which should be followed carefully. Detailed information on references, essay format, and the use of linguistic examples is given to students during orientation week: the following forms should be remembered as a guide to the most-commonly used published sources.

Bialystok, Ellen. 2001. *Bilingualism in Development: Language, Literacy, and Cognition*. Cambridge: Cambridge University Press.
Coleman, J. 2002. Phonetic representations in the mental lexicon, in J. Duran and B. Laks (eds.), *Phonetics, Phonology, and Cognition*, pp. 96-130. Oxford: Oxford University Press.
Tonhauser, Judith. 2007. Nominal tense? The meaning of Guaraní nominal temporal markers. *Language* 83: 831-869.

Assignments

PRESENTATION

Language. The discursive component of assignments must be written in English. Illustrative materials and examples may be in any appropriate language.

Length. The discursive component of assignments, including quotations from secondary sources, must not exceed 4,000 words. Word limits for smaller pieces of assessment may be set by individual lecturers. *Students are required to note the word count on the front of each assignment. They will be penalized for exceeding the stated word limit.*

Printing requirements. Assignments should be word-processed and printed *on one side of the paper only*, using double or 1.5 spacing, with a margin of at least one inch (2.5 cm) at the top, bottom, left, and right of the page. *Examiners will pay particular attention to the presentation of assignments, and candidates whose work is deficient in this regard will be penalized.*

Title page. Each assignment must begin with a title page that contains the following information (in this order): the full name of its author; the student number of the author; the title of the assignment or the task that it fulfils; the degree for which it is submitted (M.Phil. in Speech and Language Processing); the part of the course to which it is attached (where applicable); the term and year in which it is submitted.

Pagination. All pages must be clearly and sequentially numbered.

Binding. Assignments need not be bound in any formal sense, but all pages must be firmly fixed together, e.g. by a strong staple.

References. Every assignment must include an alphabetical list of references, presented according to the conventions set out above.

Doubtful cases. Candidates who are uncertain how to apply the above conventions to any of their assignments should consult with the member(s) of staff responsible for the part(s) of the course in question.

SUBMISSION

Assignments must be handed in at Room 4091, Arts Building. Michaelmas term assignments are due on Tuesday, 17January 2017 by 3pm in Room 4091, and Hilary term assignments are due on Tuesday, 1 May 2017 by 3pm in Room 4091.

Students may request an extension of up to one week only on the grounds of medical need or other extraordinary circumstances. Any such request must be made to the course coordinator prior to the assignment deadline, with a copy of the request supplied to the relevant lecturer. Extensions on medical grounds are given in accordance with general College regulations and must include medical certificates as appropriate.

A request for an extension of more than one week can only be approved by a CLCS committee established to review cases that require extraordinary consideration. A student requesting an extension of more than one week should consult with the course coordinator in the first instance. The committee will only consider

requests for a maximum extension of two weeks; any such request must be supported by adequate documentation.

Unless granted an extension in advance of the submission deadline, students will automatically be penalized for late submission of an assignment: 5 marks if the assignment is less than eight days late and 10 marks if the assignment is between eight and 14 days late.

Under no circumstances will an assignment be accepted later than two weeks after the submission date. Students who are not able to submit assignments within two weeks of the deadline will normally be expected to go 'off books' and to continue their studies at a later date in keeping with College regulations.

GRADES

Feedback is given on a standard form, using the following headings:
- Content
- Coherence of argument
- Technical Accuracy (where applicable)
- Use made of relevant literature
- Independence of thought
- Presentation
- Overall comment

Although the final degree result is not classified, assignments are graded according to the scale in general use in the university:

    I   70+
    II.1   60-69
    II.2   50-59
    III   40-49
    F   0-39

In general the four classes are to be interpreted as follows:

I — Demonstrates a full understanding of key issues, an ability to construct a detailed argument on the basis of that understanding, and a capacity for developing innovative lines of thought.

II.1 — Demonstrates a full understanding of key issues and an ability not only to construct a detailed argument on the basis of that understanding, but to generate additional insights.

II.2 — Demonstrates an adequate understanding of key issues and an ability to construct an argument on the basis of that understanding.

III — Demonstrates a basic understanding of key issues and an ability to construct a basic argument.

Students should note that grades received as part of student feedback are provisional; final grades reflect the evaluations of the

external examiners as well as the internal examiners and are decided at the Court of Examiners meeting in mid-June. Students are notified of their final module results after the meeting of the Court of Examiners.

Dissertations

As well as following the programme of study summarized above and described in detail on pp. 10-38, students write a dissertation of not more than 15,000 words in one of the areas of research described on pp. 8-9.

Students select the general area in which they will write their dissertation by the end of Week 5 in Hilary term (in their first year if they are taking their course part-time). They may begin to receive supervision later in Hilary term (in their first year if they are taking their course part-time), and are expected to have drawn up a detailed plan and work schedule for their dissertation by 8 May (in their first year if they are taking their course part-time).

The court of examiners may debar students from writing and submitting a dissertation (i) if they fail to submit a detailed plan and work schedule for their dissertation by 8 May (in their first year if they are taking their course part-time), or (ii) if they fail to achieve at least a II.2 grade in each of their assignments. See p. 39 above.

The final date for submission of dissertations is 31 August of the year in which the course is completed.

Students whose dissertation receives a fail mark may be entitled to a *viva voce* examination on the dissertation in keeping with applicable College regulations; the course coordinator should be consulted in the first instance. Students whose dissertation fails to satisfy the examiners may, on the recommendation of the court of examiners and on payment of the prescribed fee, be allowed to register for a further year and revise and resubmit their dissertation.

PRESENTATION

Language. The discursive component of dissertations must be written in English. Illustrative materials and examples may be in any appropriate language.

Length. The discursive component of dissertations must not exceed 15,000 words. Students are required to attach to their dissertation a note of the total word count. They will be penalized for exceeding the word limit.

Printing requirements. Dissertations must be word-processed and printed as follows: A4 format, *on one side of the paper only*, with

double or 1.5 spacing and margins of at least one inch (2.5 cm) at the top, bottom, left, and right of the page.

Title page. Every dissertation must begin with a title page that contains the following information (in this order): the title; the full name of its author; the degree for which it is submitted (M.Phil. in Speech and Language Processing); the year in which it is submitted.

Declaration. Immediately following the title page, every dissertation must contain the following declaration, signed and dated:

Declaration

I declare that this dissertation has not been submitted as an exercise for a degree at this or any other university and that it is entirely my own work.

I agree that the Library may lend or copy this dissertation on request.

Signed: Date:

Abstract. Immediately following the declaration, every dissertation must contain an abstract which summarizes the methods used and the conclusions reached. The abstract must be headed with the title of the dissertation and the author's full name (in that order), and must not exceed one page of single-spaced typescript.

Table of contents. Immediately following the abstract, every dissertation must contain a table of contents listing the main divisions (parts, chapters, sections, sub-sections, etc., as appropriate) and the pages on which they begin.

Binding. Every dissertation must be securely bound in dark blue cloth. The spine must bear the candidate's name in full, the degree for which the dissertation is submitted (M.Phil. in Speech and Language Processing), and the year. The front cover must bear the candidate's full name and the title of the dissertation (or an abbreviated title approved by the supervisor).

Pagination. All pages must be clearly and sequentially numbered.

References. Every dissertation must include a full alphabetical list of references, presented according to the conventions set out above.

Doubtful cases. Candidates who are uncertain how to apply the above conventions to their dissertation should consult with their supervisor.

SUBMISSION

Dissertations must be submitted in two copies, neither of which will be returned to the candidate, at Room 4091, Arts Building, not later than 31 August in the year in which the course is completed.

Students may also be asked to submit their dissertation online; details will be communicated after Hilary term. On submitting the dissertation, students will also be required to fill out an end-of-course survey. Extensions require the approval of the Dean of Graduate Studies and entail the payment of additional fees.

College regulations on plagiarism

CALENDAR STATEMENT ON PLAGIARISM – PART III, 1.32

1. General

It is clearly understood that all members of the academic community use and build on the work and ideas of others. It is commonly accepted also, however, that we build on the work and ideas of others in an open and explicit manner, and with due acknowledgement.

Plagiarism is the act of presenting the work or ideas of others as one's own, without due acknowledgement.

Plagiarism can arise from deliberate actions and also through careless thinking and/or methodology. The offence lies not in the attitude or intention of the perpetrator, but in the action and in its consequences.

It is the responsibility of the author of any work to ensure that he/she does not commit plagiarism.

Plagiarism is considered to be academically fraudulent, and an offence against academic integrity that is subject to the disciplinary procedures of the University.

2. Examples of Plagiarism

Plagiarism can arise from actions such as:

(a)   copying another student's work;

(b)   enlisting another person or persons to complete an assignment on the student's behalf;

(c)   procuring, whether with payment or otherwise, the work or ideas of another;

(d) quoting directly, without acknowledgement, from books, articles or other sources, either in printed, recorded or electronic format, including websites and social media;

(e)   paraphrasing, without acknowledgement, the writings of other authors.

Examples (d) and (e) in particular can arise through careless thinking and/or methodology where students:

(i)   fail to distinguish between their own ideas and those of others;

(ii)   fail to take proper notes during preliminary research and therefore lose track of the sources from which the notes were drawn;

(iii)   fail to distinguish between information which needs no acknowledgement because it is firmly in the public domain, and information which might be widely known, but which nevertheless requires some sort of acknowledgement;

(iv)   come across a distinctive methodology or idea and fail to record its source.

All the above serve only as examples and are not exhaustive.

3. Plagiarism in the context of group work

Students should normally submit work done in co-operation with other students only when it is done with the full knowledge and permission of the lecturer concerned. Without this, submitting work which is the product of collusion with other students may be considered to be plagiarism.

When work is submitted as the result of a Group Project, it is the responsibility of all students in the Group to ensure, so far as is possible, that no work submitted by the group is plagiarised.

4. Self-Plagiarism

No work can normally be submitted for more than one assessment for credit. Resubmitting the same work for more than one assessment for credit is normally considered self-plagiarism.

5. Avoiding Plagiarism

Students should ensure the integrity of their work by seeking advice from their lecturers, tutor or supervisor on avoiding plagiarism. All

schools and departments must include, in their handbooks or other literature given to students, guidelines on the appropriate methodology for the kind of work that students will be expected to undertake. In addition, a general set of guidelines for students on avoiding plagiarism is available at http://tcd-ie.libguides.com/plagiarism.

6.   If plagiarism as referred to in paragraph (1) above is suspected, the Director of Teaching and Learning (Postgraduate) will arrange an informal meeting with the student, the student's Supervisor and/or the academic staff member concerned, to put their suspicions to the student and give the student the opportunity to respond. Students may nominate a Graduate Students' Union representative or PG advisor to accompany them to the meeting.

7.   If the Director of Teaching and Learning (Postgraduate) forms the view that plagiarism has taken place, he/she must decide if the offence can be dealt with under the summary procedure set out below. In order for this summary procedure to be followed, all parties noted above must be in agreement. If the facts of the case are in dispute, or if the Director of Teaching and Learning (Postgraduate) feels that the penalties provided for under the summary procedure below are inappropriate given the circumstances of the case, he/she will refer the case directly to the Junior Dean, who will interview the student and may implement the procedures set out in Section 5 (Other General Regulations).

8.   If the offence can be dealt with under the summary procedure, the Director of Teaching and Learning (Postgraduate) will recommend one of the following penalties:

 (a) Level 1: Student receives an informal verbal warning. The piece of work in question is inadmissible. The student is required to rephrase and correctly reference all plagiarised elements. Other content should not be altered. The resubmitted work will be assessed and marked without penalty;

(b) Level 2: Student receives a formal written warning. The piece of work in question is inadmissible. The student is required to rephrase and correctly reference all plagiarised elements. Other content should not be altered. The resubmitted work will receive a reduced or capped mark depending on the seriousness/extent of plagiarism;

(c)   Level 3: Student receives a formal written warning. The piece of work in question is inadmissible. There is no opportunity for resubmission.

9. Provided that the appropriate procedure has been followed and all parties in (6) above are in agreement with the proposed penalty, the Director of Teaching and Learning (Postgraduate) should in the case of a Level 1 offence, inform the Course Director and, where appropriate, the Course Office. In the case of a Level 2 or Level 3 offence, the Dean of Graduate Studies must be notified and requested to approve the recommended penalty. The Dean of Graduate Studies will inform the Junior Dean accordingly. The Junior Dean may nevertheless implement the procedures as set out in Section 5 (Other General Regulations).

10. If the case cannot normally be dealt with under summary procedures, it is deemed to be a Level 4 offence and will be referred directly to the Junior Dean. Nothing provided for under the summary procedure diminishes or prejudices the disciplinary powers of the Junior Dean under the 2010 Consolidated Statutes.

Postgraduate Advisory Service

The Postgraduate Advisory Service is a unique and confidential service available to all registered postgraduate students in Trinity College. It offers a comprehensive range of academic, pastoral and professional supports dedicated to enhancing your student experience.
Who?
The Postgraduate Advisory Service is led by the Postgraduate Support Officer who provides frontline support for all Postgraduate students in Trinity. The Postgrad Support Officer will act as your first point of contact and a source of support and guidance regardless of what stage of your Postgrad you're at. In addition each Faculty has three members of Academic staff appointed as Postgraduate Advisors who you can be referred to by the Postgrad Support Officer for extra assistance if needed.
Contact details of the Postgrad Support Officer and the Advisory Panel are available at http://www.tcd.ie/Senior_Tutor/postgraduate/
Where?

The PAS is located on the second floor of House 27. They are open from 8.30 – 4.30, Monday to Friday. Appointments are available from 9am to 4pm; Phone: 8961417; Email: pgsupp@tcd.ie

What?

The PAS exists to ensure that all Postgrad students have a contact point who they can turn to for support and information on college services and academic issues arising. Representation assistance to Postgrad students is offered in the area of discipline and/ or academic appeals arising out of examinations or thesis submissions, supervisory issues, general information on Postgrad student life and many others. If in doubt, get in touch! All queries will be treated with confidentiality. For more information on what we offer see PAS website.