School of Computer Science and Statistics

Computer Science and Language
2019–2020
B. A. (Mod.) Computer Science and Language: Course Handbook 2019–2020

Centre for Computing and Language Studies
Trinity College Dublin
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Chapter 1

Overview of Computer Science and Language

C.A.O. Course Reference Number: TR039

Since 1985, a four year honors degree course has been offered jointly by what is now the School of Computer Science and Statistics, the Department of French, the Department of Germanic Studies, the School of Irish and Celtic Languages and the School of Linguistic, Speech and Communication Sciences. This is the Computer Science and Language program.

Approximately 50% of time is given to the study of Computer Science. The Language part of the program name importantly refers to two distinct though related areas. The first refers to mastery and study of a particular language, which might be French, German or Irish, and approximately 25% of time is given to this. The second is the science of language in general, the field known as linguistics with its sub-field of computational linguistics, and approximately 25% of time is given to this. Though notionally separate, the 3 areas have a lot of areas of overlap. This is most obvious in the computational linguistics area but there are other areas of connection, such as the indispensable use of the notions of recursion and substructure in both computer science and linguistics, or the shared focus on pronunciation and word-order in language-mastery and linguistics.

The CSL program seeks to foster a wide range of attributes and capabilities in its graduates. The computer science part seeks to equip graduates with a full mastery of the techniques involved in creating computing software, understanding how the computer applications seen today truly work and possessed of an ability to participate in the ongoing process of developing new software for new arenas. This cannot be equated with ‘simply’ learning a programming language but involves honing a set of skills relating to rigorous systematic analysis of problems and systems and methodical development of solutions. The parts of CSL dedicated to a particular language (which will variously be French, German or Irish depending on the student) aim to give students a truly high level of competence, one commensurate with the possibility of making this a major part of their future careers. Linguistics, or the scientific study of language, is possibly the part most remote from a student’s likely experience prior to university. Quite surprising regularities and complex systems have been discovered as people have looked at languages in a scientific fashion, concerning for example the acoustic building blocks of languages, or the kinds of mechanism needed to precisely distinguish actual sentences from random word sequences, and many others. Students will become acquainted with this body of knowledge and by its nature this fosters further talents concerning forensic conceptual analysis and literate expression of ideas, alongside the nuanced understanding of a foreign language and culture and skills in numeracy and algorithmic thinking deriving from the other areas. Computational linguistics is especially concerned

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1 For example though you may hear people say of someone that ‘they are quite the linguist’ meaning ‘good at foreign languages’ this is not the relevant sense of ‘linguist’ here
with the use of computers in new technologies related to language. There has been a great increase in the relevance of such technologies, as exemplified by machine translation or speech recognizers and an aim is to enable graduates to also contribute to this particular area of computer applications.

The rest of this handbook will explain in detail the structure of the CSL program. In essence, throughout the program the three above-mentioned areas (computer science, a particular language, linguistics) are studied, and in roughly a 50:25:25 proportion. Typically the students spend their third year as an Erasmus exchange student attending courses at another European University. At that university, and by dint of their location, they continue their study of their particular language of focus, and also continue to take modules in the other parts of CSL, namely Computer Science and Linguistics. We have a specific network of exchange agreements with partner institutions which allows for this.

As a matter of study style we like as much as possible to encourage students to exhibit and develop their individual knowledge and skills through projects. This happens in 1st and 2nd year modules, this happens in their year abroad, during which students are expected to do a project on the linguistic properties of their language (see §3.3.3 and §5.1), and in their fourth year a whole module is designated as a Final Year Project. The subject area of this project can come from any of the contributing disciplines, or combine more than one (as for example a computational linguistics project almost certainly will). This, along with the fact that there are optional modules in the final year from across the contributing disciplines means that there is some scope for the balance to depart from the 50:25:25 split in the preceding years.

Graduates have gone to direct employment in a wide variety of careers, for example as software engineers generally, as developers in labs for research and development in speech and language, as technical project managers in multinationals, as people specially capable in a particular language in foreign diplomacy or the European Patent office. Graduates have also gone to further research oriented courses in linguistics and computational linguistics. About this and much else please see also the course web pages www.sccs.tcd.ie/undergraduate/computer-science-language

As an inherently interdisciplinary program, CSL could be said to combine ‘arts’ and ‘sciences’, though we might prefer to call this pursuing interesting, useful and intriguing skills and knowledge wherever they are to be found. Those involved hope and believe its subject matter is diverse and stimulating. This multidisciplinarity brings with it perhaps some challenges absent from a single-subject program, but that makes it correspondingly more rewarding.
Chapter 2

Information for New Students

This part of the Handbook contains information which will be of most relevance to new students. Returning students would do well to have a re-read of this part, as well as the rest of the handbook, as year-on-year there are changes, usually small, but occasionally more significant.

2.1 Introduction

Welcome to Trinity College and to this degree programme, known for the last few years as 'Computer Science and Language' (CSL), and for many years hitherto as 'Computer Science, Linguistics and a Language' (CSLL). The pace of language change being generally slow, you can expect to encounter the older name from time to time. The principal aim of this handbook is to provide you with an introduction to what lies before you and to put at your disposal as much detailed information about the course, including regulations, as it is useful to supply at this stage.

Subsequent sections give further details, with section 3 giving a year-on-year overview and section 4 giving further information about the departments involved and the modules which they provide; though currently enrolled students can drill further into module content details via their TCD portal (see 2.14) some of this information may be useful to prospective students who have run into this handbook.

Beside this printed information, the following urls from the participating departments should be also consulted:

- main CSL pages: www.scss.tcd.ie/undergraduate/computer-science-language
- Computer Science: www.scss.tcd.ie
- Linguistics: www.tcd.ie/slscs/clcs
- German: www.tcd.ie/Germanic_Studies
- French: www.tcd.ie/French
- Irish: www.tcd.ie/Irish

2.2 The Course Director

The CSL Course Director is Dr Martin Emms. Dr Emms teaches Computational Linguistics and thus works at the interface between the linguistics and language-related elements of the course and the computer science elements. Dr Emms’s office is in the basement of the O’Reilly Institute, LG18. His e-mail address is Martin.Emms@scss.tcd.ie, and his College telephone extension number is 1542.
The executive officer is Ms. Hannah Archbold (ext. 1768)
Feel free to contact the Course Director about any concerns that you might have about the degree.
Additionally, he would like to meet with each of you individually during the first academic term, preferably during the Study Week. You will be contacted nearer the time to arrange this meeting by Ms. Hannah Archbold.

2.2.1 Centre for Computing & Language Studies

There is an administrative interdisciplinary unit which is home to the CSL course, called the Centre for Computing and Language Studies. The director of this is Dr Carl Vogel, its email address is ccls@tcd.ie, and its executive office is Ms. Hannah Archbold (tel: 896 3425, fax: 677 2204).

2.3 Your Year Co-ordinator

Each year of the CSL programme has a Year Co-ordinator assigned to it. The Year Co-ordinator for your year, the Junior Freshman Year (First Year), is Dr Rachel Hoare of the Department of French (Arts Building, Room 4103; e-mail: rmhoare@tcd.ie; College tel. ext.: 1842). The Year Co-ordinators for the other years of the programme are as follows:

Senior Freshman Year (Second Year): Katrin Eberbach, Department of Germanic Studies
Junior Sophister Year (Third Year): Dr Carl Vogel, School of Computer Science and Statistics
Senior Sophister Year (Fourth Year):
   Prof Ailbhe Ní Chasaide
   Centre for Language and Communication Studies

If you have any problems of an academic kind you should in the first instance contact your Year Co-ordinator. Do not hesitate to do so.

2.4 The Year and Subject Area Contact Persons

You will notice that the year Co-ordinators are drawn from four of the five departments which contribute to the CSL course. They also “double” as contact persons for the respective subject areas — thus: Katrin Eberbach for German, Dr Hoare for French, Dr Vogel for Computer Science and Prof Ailbhe Ní Chasaide for Linguistics. The subject area contact person for Irish is Dr Eoin Mac Cóirtheigh of the Dept. of Irish and Celtic Languages.

2.5 Your Tutor

You should have already heard from the Senior Tutor that you have a designated Tutor within the College whose role is to monitor your general welfare as well as to deal with your concerns and needs in a supportive and confidential way. In the same package that included material about the orientation day was included the name of your academic Tutor. You should definitely make contact with your Tutor as soon as possible, if you haven’t already, and establish a plan for how often you will meet with your Tutor.

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1Not to be confused with the Centre for Language and Communication Studies, which provides the linguistics component of CSL, of which more anon – see §4.2.1.
2She is fulfilling this role in the first term (S1), whilst it someone else will take that role in the second term (S2). Name TBC
2.6 Electing a Class Representative

Each CSL year has a Class Representative who attends meetings of the CSL Management Committee. That is the main body which monitors the programme, tries constantly to improve it, and addresses any difficulties that arise. The Junior Freshman class should elect its representative by the end of October, and the representative’s name should be communicated to Ms. Hannah Archbold, to Dr Emms, to Dr Vogel, and to Dr Hoare, so that the person in question may be put on the mailing list for invitations to meetings.

2.7 Structure of the Academic Year

Modules are described by year following the traditional College system, where Junior Freshman refers to first year; Senior Freshman, to second year, Junior Sophister, to third year; Senior Sophister, to the fourth and final year.

Trinity has an academic year structure which repeats every year. Trinity’s ‘Calendar’ pages\(^3\) at [www.tcd.ie/calendar](http://www.tcd.ie/calendar) gives this structure in colour-coded form, along with printable A4 pdf [www.tcd.ie/calendar/academic-year-structure/academic-year-structure.pdf](http://www.tcd.ie/calendar/academic-year-structure/academic-year-structure.pdf). A more compact version of it is shown below.

<table>
<thead>
<tr>
<th>2019-20</th>
<th>Semester 1</th>
<th>Winter session</th>
<th>Semester 2</th>
<th>Hillary term</th>
<th>Trinity term</th>
<th>Summer session</th>
</tr>
</thead>
<tbody>
<tr>
<td>Michaelmas Term</td>
<td>Teaching and Learning 6 weeks</td>
<td>Teaching and Learning 5 weeks</td>
<td>Teaching and Learning 6 weeks</td>
<td>Teaching and Learning 5 weeks</td>
<td>Teaching and Learning 6 weeks</td>
<td>Research 3 weeks</td>
</tr>
<tr>
<td>Hilary Term</td>
<td>Exams</td>
<td>Exams</td>
<td>Exams</td>
<td>Exams</td>
<td>Exams</td>
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</tr>
<tr>
<td>Trinity Term</td>
<td>Exams</td>
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<tr>
<td>Summer session</td>
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</table>

There are two Semesters, during both of which teaching does occur, and during both of which examinations may occur. The teaching and examination portions of these semesters are of 14 weeks duration, running September – December and January – April. Historically there was a division into three terms, Michaelmas (MT), Hilary (HT) and Trinity (TT) and the custom persists of designating the weeks of Semester 1 as being in ‘Michaelmas term’ and those of Semester 2 as being in ‘Hilary term’.

In each of the Semesters the 7th week is designated as a Reading Week. During this week you may anticipate allocating time for reading and other forms of research towards projects due once the reading week ends.

The 14th week of each Semester is designated to be a week in which examinations may take place\(^4\). Scheduling constraints may cause examinations also also to take place just before or just after.

2.8 ECTS and Progression

Each module is assigned an European Credit Transfer System (ECTS) rating, such that in total a single year’s modules amount to 60 ECTS altogether\(^5\). ‘Progression’ is the Trinity term for meeting the academic requirements to move from one year into the next: to pass in other words. Details

\(^3\)mainly a repository of regulations

\(^4\)including the prior Saturday

\(^5\)Firstly on a linguistic point, note how ‘ECTS’ seems to be used as an acronym and as a plural count noun. Secondly note that in section 8.7 the full official exposition of the ECTS notion is given.
concerning this appear both in the subsequent sections of this handbook dedicated to each contributing department, and in Chapter 6 CSL Progress Regulations, but in outline the process is as follows.

Relating to each module there are initial examinations (mentioned in the preceding section). Marks achieved on modules are weighted by their ECTS rating and a credit-weighted average of at least 40% must be achieved. Usually the mark on each individual module is also at least 40%, though technically there are provisions for a marginally lower mark to be tolerated on a small number of ECTS. A student meeting these requirements may progress to the next year. There is an opportunity via so-called supplemental examinations (in August) to meet these requirements after an initial failure.

However, regulatory details aside, do not aim to merely pass the year — there is too much work involved within and across departments for such a low expectation to yield a successful overall strategy. Aim high. Aim for first class marks. Aim for Schol in your SF year. If you do aim high, putting in an appropriate high standard of effort, you are far more likely to find success than if you try to maintain nothing more than a passing level standard.

2.9 Scholarship and other Prizes

Foundation scholarship is a longstanding College institution. A special set of ‘Schol’ exams are held just before the 2nd semester in Year 2. Sufficiently excellent performance in these exams leads to being official designated a Scholar, which is very prestigious, and is also rewarded with certain privileges, of particular note being free accommodation and meals on campus.

The ‘Schol’ exams are not just an early version of the later Summer exams but strive to find if candidates have a non-superficial understanding of concepts from all modules, across both years of their study. Attempting the scholarship examination is highly recommended, as even if you are unsuccessful there is a great dividend in deepened understanding simply through preparing for them.


In relation to the standard examinations there are also a number of prizes based on excellent performance. In years prior to the final year, any student with an overall 1st receives a book prize, whilst in the final year there is the possibility to receive a Gold medal. There are also some awards made by the individual participating departments. To find out more about these see:

[www.tcd.ie/academicregistry/exams/assets/local/gold-medal-criteria.pdf](www.tcd.ie/academicregistry/exams/assets/local/gold-medal-criteria.pdf)
[www.tcd.ie/calendar/undergraduate-studies/prizes-and-other-awards.pdf](www.tcd.ie/calendar/undergraduate-studies/prizes-and-other-awards.pdf)

2.10 The Year Abroad

As you know, your degree is organized such that you spend the Junior Sophister year (third year) studying at a university abroad. At the start of the 2nd year, you will receive a comprehensive booklet giving you information about what will be expected of you during the 3rd year abroad. Currently, students go to Bielefeld, Bremen, Glasgow, Grenoble, Louvain, Lyon, Nice, Osnabrück, Stuttgart, Saarbrücken, Toulouse, or Tübingen, depending on their language of focus.

One of the people who organize this section of the programme is currently Dr Vogel, your Junior Sophister coordinator. The Erasmus Coordinator for exchanges between other universities abroad and the School of Computer Science and Statistics is Macu Arnedillo Sanchez.

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6essentially its not worth anticipating these very marginal tolerances and you should just reckon with having to straightforwardly pass

7See 2.7 for more on the timing

8More precisely, students whose language is French or German must do this, whereas for students whose language is Irish it is a possibility
Subject to renewal by the European Union, CSL students are eligible for modest Grants through the Erasmus program for European student mobility. These grants are open only to EU nationals. Non-EU CSL students may make use of positions open at partner universities via the Socrates exchange, paying TCD tuition fees as normal, but are not eligible to receive the grant. Non-EU CSL students are nonetheless expected to spend the Junior Sophister year abroad. There is a separate handbook for the Erasmus year.

## 2.11 Non-examined components

Some facets of CSL are designed to provide emphasis on topics that unite the three departments that any one student is a member of. These events all provide added value to the timetabled teaching that is examined, and participation should make it easier for students to see the bigger picture of CSL, how topics relate to each other, and along the way make it easier to do well in examinations.

### 2.11.1 Dublin Computational Linguistics Research Seminar

The Dublin Computational Linguistics Research Seminar (DCLRS) is a seminar series that follows a very broad construal of the term, “computational linguistics”. Talks on topics such as pure translation theory, syntax, semantics, speech science, phonetics, psychology, psycholinguistics, artificial intelligence, and many other related areas will be presented, with speakers coming from far and wide. Sometimes the talks are at an advanced level, and sometimes introductory overviews. When a seminar takes place it is on Friday, at 4p.m.

You will receive electronic announcements of each talk, with a title and abstract. You’ll also be notified when talks are especially accessible.

We encourage you to attend all the seminars. There is a process by which to confirm a certain level of participation, one designed not to be onerous: you record your attendance by filing a brief (one or two paragraph) summary of the talk and what you learned from it. The number of confirmed attended/summarised seminars is dependent on the number of scheduled seminars and the quota will be set around the end of November. To the fulfillment of this requirement 5 ECTS is attached in Year 1 and in all years it will be recorded in student transcripts.

Students should heed the fact the end of term often coincides with major term projects, essays and other demands on time and attention. Similarly, it might be advisable not to plan on attending your quota of talks during the last term of the year.

### 2.11.2 Christmas Conference

At the end of the first term, we have an event known as the Christmas Conference. At this event the Senior Sophister students make (relatively informal) progress reports on their work to date on their Final Year Projects. All CSL students in all years attend. Sometimes graduates recent and not so recent also attend to say a few words about what they have gone on to do. Also in the audience are often representatives of local companies, some who may offer summer internships or further recruitment possibilities to CSL undergraduates. After the presentations, we have a reception/party for all of CSL.

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9See section 2.14 for how to ensure that is the case
10with Carl Vogel or Martin Emms by the Monday following the talk
CHAPTER 2. INFORMATION FOR NEW STUDENTS

2.12 Libraries

The main library for computing-related material is the Hamilton Library. The Lecky Library contains computer science and mathematics texts. Students will also require the Berkeley and Ussher libraries. The SCSS Library is available for certain materials, like past student work.

2.13 Computing Facilities

There are College computing facilities and there are computing facilities provided by the Computer Science department itself. The College computing facilities and the Computer Science facilities are separately administered. The username and password that you are initially assigned to allow access to College computers will also be initially valid for the facilities in the department of Computer Science, but password changes on College computers will not carry over to Computer Science machines, nor vice-versa. They are simply separate accounts.

If something goes wrong with your College account, contact helpdesk@tcd.ie. If something goes wrong with your Computer Science account, or you otherwise have a problem with one of the department’s machines contact help@cs.tcd.ie – do not be too diffident about doing this as without such email enquiries there is no way for the computer administrators to know there is a problem and it will simply persist, both for you and for other students.

You may not share your account with anyone inside or outside college. Nor may you make inappropriate use of college provided web access. It is also considered a serious waste of resources to play computer games on college facilities. Violating regulations can cost you your computing privileges, and in a degree like CSL it is impossible to pass without access to appropriate facilities in order to practice what you learn. If you have time for computer games please take advantage of that only on your home facilities.

IS Services produce a comprehensive booklet on the College computing facilities. All students are advised to purchase a copy of this booklet.

2.14 Important online information and communication channels

Naturally a great deal of communication will be via your College email account, which you can access through http://myzone.tcd.ie. It is expected that you will check your College email regularly. The use of other email addresses for official communication is discouraged.

A great deal of information is available via the ‘TCD portal':

my.tcd.ie

Timetable information is available by this means, both personal timetables and module-specific timetables: in the subsequent sections of this document you will find the modules which form your course. Using a module code, crucial module-specific details are available via the portal under Courses & Modules. Communications may be sent from College services to an ‘intray’ of messages hosted on this portal. Additionally, the computer science department provides time-table information for its modules at

https://www.scss.tcd.ie/undergraduate/timetables.php

Examination time-table information is, in due course, also communicated via my.tcd.ie. One of the functions of the Academic Registry (see https://www.tcd.ie/academicregistry/about/) is to provide all details relating to examinations (regulations, past papers and so on). Most other un-
dergraduate administrative services are in their remit too, such as Fees & Payments, Annual Student Registration and Graduation.

Many modules make use of the ‘TCD Blackboard’ **online learning system**, which is accessible via:\footnote{You should have an initial encounter with this during Orientation Week}

http://mymodule.tcd.ie

There is a mailing list used to announce details of the Dublin Computational Linguistics Research Seminar (DCLRS) are sent to a list created for that purpose. In order to be aware when seminars are scheduled and what they are about, it is therefore very advisable to be subscribed to that list. This is possible using this link:

https://lists.scss.tcd.ie/mailman/listinfo/cogsci

There is further mailing list called **fyi-list** to which announcements are sent concerning job, scholarship and other opportunities in computational linguistics, cognitive science and cognate disciplines. It is possible to subscribe using this link:

https://lists.scss.tcd.ie/mailman/listinfo/fyi-list

Besides these online sources of information, you will find **physical** notice boards in all the relevant departments, and you should also get acquainted with these.

### 2.15 Student Supports

Mentioned above were a number of people to whom you can turn for advice and assistance, such as the Course Director, the particular Subject Area contact people 2.4, your Tutor 2.5 and your Class Representative 2.6.

Alongside the standard teaching and learning mechanisms, the different participating departments operate further systems which offer academic support; for example Computer Science offers the **Programming Centre** ‘drop-in’ service, and Maths offers an analogous **Maths helproom**. Further information about these kinds of academic supports will be given in the later sections of this handbook relating to each contributing department.

Some further sources of assistance relating to academic concerns are briefly noted below:

- The **Student to Student Service**\footnote{to which Junior Freshmen are introduced during Orientation Week} (aka ‘S2S’) provides a peer mentoring avenue through which to seek support (email student2student@tcd.ie or phone 8962438). See Figure 2.1.

- **Student Learning Development** (see [www.tcd.ie/Student_Counselling/student-learning](http://www.tcd.ie/Student_Counselling/student-learning)) provide more general supports to help students reach their academic potential via workshops, extensive online resources and individual consultations.

- The **Students’ Union Education Officer** (email education@tcdsu.org, web [http://www.tcdsu.org](http://www.tcdsu.org))

There are also wide range of support services addressing concerns beyond the academic.

- The **Student Counselling Service**, 3rd Floor, 7–9 South Leinster Street, College. Opening hours: 9:15 am to 5:10 pm Monday to Friday during lecture term. Phone: 8961407. Email: student-counselling@tcd.ie
  Web: [http://www.tcd.ie/Student_Counselling](http://www.tcd.ie/Student_Counselling).
Figure 2.1: Student to Student services
2.16 Regulations

Naturally there are many regulations and policies that you should get acquainted with. Rather than elaborating on these at this point of the handbook, this important information is located in sections 6 and 8. Please take the time to look at these: one of the things noted there is that ignorance of the regulations is not taken as a valid reason for failure to comply. In respect of course-work associated with individual modules, you need to ensure you know each module’s requirements. For linguistics and the language departments see chapter 4 and for computer science see section 3.6 of www.scss.tcd.ie/undergraduate/computer-science/assets/docs/ICSHandbook.pdf.

2.17 And finally

Once again welcome to the course. Although well established (since 1985), it is a relatively unconventional sort of course here in Ireland, in the way it combines elements from different disciplines and involves other Dublin institutions. We trust that you will find the combination suitably challenging and stimulating. The Junior Freshman year is designed to give you a foundation in each of the disciplines in the combination you have chosen, so that as the course progresses you will be able to make use of the skills you acquire in each to focus on the areas of study that most interest you. As you proceed through the degree it will become increasingly clear how the parts fit together. You will need to be physically fit, for your classes will take place in different parts of the campus, and you will have to be mentally agile too, for you will notice that different departments have different styles and traditions. Quite positively, you will gain a breadth of competencies and experience which goes far beyond that delivered by more conventional mono-disciplinary courses.

Have a good year! Enjoy the entire degree!
Chapter 3

Yearly Structure

A listing of the modules taken in each year is given below. Further details on the content of individual modules are given in 4.

3.1 Junior Freshman

3.1.1 Computer Science

• CSU11001 Mathematics I, CSU11002 Mathematics II (S1, S2, 10 ECTS)
• CSU11010 Introduction to Programming (S1, S2 10 ECTS)
• CSU11021 Introduction to Computing I (S1 5 ECTS)

3.1.2 Linguistics

• LIU11001 Language, The Individual and Society (general linguistics) (5 ECTS, S1)
• LIU11002 Introduction to Syntax (5 ECTS, S2)
• LIU11003 Introduction to Phonetics and Phonology (5 ECTS, S2)

3.1.3 Language

• French/German/Irish (15 ECTS)

  Irish  IRU1144Y (Cear t agus labhaír t na teanga, 10 ECTS, S1, S2), IRU11411 (Pobal agus teanga, 5 ECTS, S1)

  German  GRU1100Y (German language fluency, 10 ECTS, S1, S2), GRU11011 (Landeskunde, 5 ECTS, S1)

  French  FRU11001 & FRU11002 (Written language, 10 ECTS, S1, S2), FRU11022 (French and francophone cultures, 5 ECTS, S1)

3.1.4 Dublin Computational Linguistics Research Seminar

• CSU11L01 DCLRS (5 ECTS). See §2.11.1
3.2 Senior Freshman

3.2.1 Computer Science

- MAU22C00 Discrete Mathematics (S1, S2 10 ECTS)
- CSU22010 Algorithms and Data Structures (S1, S2, 10 ECTS)
- CSU22063 Intermediate Programming and Natural Language Processing (S1 & S2, 10 ECTS)

3.2.2 Linguistics

- LI2034 Syntax and Semantics (S1, 5 ECTS)
- LI2036 Computational Morphology and Statistics (S1, 5 ECTS)
- LI2035 Speech Science and Phonetics (S2, 5 ECTS)

3.2.3 Language

- French/German/Irish
  - Irish IRU2244Y (Ceart agus labhairt na teanga, 10 ECTS, S1, S2), IRU22432 (Gàidhlig, 5 ECTS, S2)
  - German GRU2200Y (German Language Fluency, 10 ECTS, S1, S2), GRU22051 (German Cultural History, 5 ECTS, S1)
  - French FRU22001 & FRU22002 (Oral and Written French, 10 ECTS, S1, S2), FRU22072 (French Language for Computer Science, 5 ECTS, S2)

3.2.4 Dublin Computational Linguistics Research Seminar

- CSU22L02 DCLRS\(^1\) see §2.11.1

3.3 Junior Sophister

For CSL students whose language is German or French, it is a requirement to spend no less than two months in another country with the primary language of choice, and unless there are extremely exceptional circumstances, they will spend the entire Junior Sophister year abroad at another European University. At these partner universities modules will continue to be taken in Computer Science and Linguistics. CSL students whose language is Irish must spend two months in the Gaeltacht and may spend their Junior Sophister year in TCD or in a Scottish university.

All CSL students must in this JS year fulfil a project requirement (see §3.3.3).

Students who need to repeat the Junior Sophister year do so at home at Trinity in the modules described in the rest of this section.

3.3.1 Computer Science

- STU22004 Applied Probability 1 (S1, 5 ECTS)
- CSU34011 Symbolic Programming (S1, 5 ECTS)
- CSU33012 Software Engineering (S1, 5 ECTS)

\(^1\) Though appearing variously as CSU11L01/2202/3303/4404 this is one module attended by all
CHAPTER 3. YEARLY STRUCTURE

- CSU33071 Compiler Design I (S1, 5 ECTS)
- CSU33061 Artificial Intelligence I (S2, 5 ECTS)
- CSU33013 Software Engineering Group Project (S2, 5 ECTS), or
  CSU34016 Introduction to Functional Programming (S1, 5 ECTS), or
  CSU33081 Computational Mathematics (S2, 5 ECTS)

3.3.2 Linguistics and a Language

Students take classes in language fluency, in the linguistic study of their chosen language, and choose 3 of the following 4 theoretical and applied linguistics modules:

- LI2307 Aspects of Written Language (S1, 5 ECTS)
- LI2303 Language Learning (S1, 5 ECTS)
- LI2301 Aspects of vocabulary (S2, 5 ECTS)
- LI2304 Sociolinguistics (S2, 5 ECTS)

3.3.3 Project

Students develop a formal linguistic analysis of interesting phenomena within the language they study for the degree, from the perspective of one of the linguistic components of the degree (e.g. phonetics, syntax, semantics, etc.). The exact topic is negotiated individually, and it can be jointly evaluated by the host and home institutions. For example, students might undertake an analytic study which could be developed further in the fourth year in the context of final year option modules or the final year project. Alternatively, they might avail of the opportunity to participate at some level in an ongoing research project in the host university, and focus their third year project as a report on that research. In any case, the project should combine a domain of linguistics with analysis of their language. See §5 for further details on past projects.

3.3.4 Dublin Computational Linguistics Research Seminar

- CSU33LL3 DCLRS ² see §2.11.1

Students abroad are encouraged to engage in host institutions’ seminar series as well.

3.4 Senior Sophister

In Senior Sophister, there are mandatory courses across all components, as before, and additionally, elective ones. One or two ‘option’ courses are chosen from the year’s currently available suite of options, amounting to 10 ECTS-worth³. Also a Final Year Project is undertaken (worth 10 ECTS).

3.4.1 Computer Science

- CSU34041 Information Management (5 ECTS, S1)
- CSU44061 Machine Learning (5 ECTS, S1)
- CSU44060 Knowledge Representation and Automata (5 ECTS, S2)

² Though appearing variously as CSU11L01/2202/3303/4404 this is one module attended by all
³ So two modules worth 5 ECTS each, or one worth 10
3.4.2 Linguistics

- LI4031 Speech Analysis and Synthesis (S1, 5 ECTS)
- LI4032 Computational Linguistics (S2, 5 ECTS)

3.4.3 Language

- French/German/Irish
  - Irish IRU4440Y (Ranganna teagaisc, 10 ECTS, S1, S2), IRU44411 (Gàidhlig, 5 ECTS, S1, S2)
  - German GRU4400Y (German Language 4, 10 ECTS, S1, S2), GRU44012 (German Translation, 5 ECTS, S2)
  - French FRU44051 & FRU44052 (Oral and Essay skills for CSL, 10 ECTS, S1, S2), FRU44062 (Translation skills for CSL, 5 ECTS S2)

Senior Sophister students select 10 ECTS worth of option modules\(^4\) from the year’s currently available suite of options. They vary from year to year. A representative range is provided below. Students should anticipate narrowing down their selection of option modules by the week preceding Trinity Week in their Junior Sophister year.

3.4.4 Option Modules and Final Year Project

In addition to the above, Senior Sophister students take options (amounting in total to 10 ECTS) and undertake a Final Year Project (worth 10 ECTS).

The Final Year Project can may be in any area of computer science, linguistics or language study which interests the student and for which the student can locate a supportive supervisor, and will involve year-long research and delivery of a substantial written report. You can find on the CSL website a list of recent projects.

The option modules can be selected from the options offered within the CS department, or from those offered in the other streams of the degree course, subject to these amounting to 10 ECTS in total (and the agreement of the course director). These options are subject to some change year on year. The following list is indicative of options that have been offered recently:

- CSU44062 Advanced Computational Linguistics (S1, 5 ECTS)
- CSU44001 Fuzzy Logic (S1, 5 ECTS)
- CSU44004 Formal Verification Techniques (S1, 5 ECTS)
- CSU44012 Topics in Functional Programming (S1, 5 ECTS)
- CSU44021 Advanced Computer Architecture (S1, 5 ECTS)
- CSU44031 Mobile Communications (S1, 5 ECTS)
- CSU44052 Computer Graphics (S1, 5 ECTS)
- CSU44053 Computer Vision (S1, 5 ECTS)
- LI4034 Second language acquisition (S1, 10 ECTS)
- FR4043 Language and society in the French-speaking world (S1, S2 10 ECTS)
- Roghanna éagsúla sa Ghaeilge. (Liosta le fáil ó oifig Roinn na Gaeilge.)

3.4.5 Dublin Computational Linguistics Research Seminar

- CSU44LL4 DCLRS \(^5\) see §2.11.1

\(^4\) So two modules worth 5 ECTS each, or one worth 10
\(^5\) Though appearing variously as CSU11L01/2202/3303/4404 this is one module attended by all
Chapter 4

Contributing Departments

4.1 School of Computer Science and Statistics

4.1.1 Background to the Computer Science Department

In Trinity College the first computer, an IBM 1620, was installed in 1962 in the Engineering School. In Ireland, Computer Science departments in the Universities were inspired by either Engineering Schools or by Science Departments, rather than Mathematics as was common in Western Europe.\(^1\) This has several advantages. The design and construction of systems consists of many activities which are common to all Engineering disciplines and the discipline of Computer Science benefits greatly from this environment. Modules are naturally oriented towards the basic principles underlying design and construction of software and hardware systems. Extensive course work and individual and team projects are readily incorporated. One of the most important benefits is that links with industry are natural and strongly encouraged and hence the training of graduates is oriented towards what they will be doing in industry but this must be moderated by the fact that rapid changes will occur over the forty years of a graduate’s career. It is vitally important that a student be taught enough basic principles underlying the subject so that he or she will be in a good position to quickly learn new ideas and concepts during his or her working years. A proper balance must be maintained between theory and practice.

4.1.2 Contact Information and Administrative Staff

The School of Computer Science and Statistics is part of the Faculty of Engineering, Mathematics and Science, and Prof. Carol O’Sullivan is the Head of School.

The CS Subject Area coordinator for CSL students is

- Dr Carl Vogel
  
e-mail vogel@tcd.ie
  
ORI Room LG.16 Telephone Extension 1538 (353 1 896 1538 or 353 1 896 1765)

The Administration Officer is

- Ms. Hannah Archbold (Teaching Support Unit)

The Teaching Support Unit can be contacted by emailing teaching-unit@scss.tcd.ie. Detailed enquiries regarding modules, assignments, feedback and supervision should be directed in the first instance to the administrative staff in the Teaching Support Unit who will then, where appropriate, inform the director and coordinator.

\(^1\)The department was set up by Professor J.G. Byrne who retired in 2003.
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Within the School of Computer Science and Statistics, Dr Ken Dawson-Howe is the overall course-director of the Integrated Computer Science degree programme and coordinator for years 1-3, whilst Dr Owen Conlan is its coordinator for other years. Dr Jonathan Dukes is the departmental Director of Undergraduate Teaching and Learning. All three are available to advise on matters going beyond the confines of a single CS module.

The details of the Department’s main Reception are given below; on certain occasions it may be necessary to submit work here, and Reception may be able to answer queries about the likely office schedule of individual staff members.

Reception location beside Room G.8 in the O’Reilly Institute.

Opening hours during lecture terms are 9:15 am to 11:00 am, 11:30 am to 1:00 pm and 2:00 pm to 4:30 pm.

Tel (01) 896 1765
Fax (01) 677 2204
Email enquiries@scss.tcd.ie
Web http://www.scss.tcd.ie/
Address School of Computer Science and Statistics, O’Reilly Institute, Trinity College Dublin, Dublin 2. Ireland.

It is worth noting that several notice boards are situated in the vicinity of this reception area.

4.1.3 Research Interests

The School of Computer Science and Statistics is one of the largest research departments in College in terms of finances emerging from research grants and commercialized spin-offs. The Department has earned an international reputation for research excellence and works closely with industry and other research establishments across the world. Students benefit enormously from the Department’s depth of knowledge in many leading-edge technologies.


The Computational Linguistics Group at Trinity produced the first Irish language spelling checker to be licensed by Microsoft for inclusion in its products. Supporting this license is a current activity of Carlow Answers, plc., founded by a CSL graduate who pursued further postgraduate study in the area of computational linguistics.

4.1.4 SCSS Computer Facilities

The Department has its own computer facilities, far surpassing the facilities and services supplied by ISS. These facilities are in several locations and have in some cases undergone recent relocation: you will need to attend to information at Orientation Week and on-line for all details. One of the SCSS labs that you make use of is LG12 located in the basement of the O’Reilly Institute (not far from where your Course Director is buried).

Please note that system support is also available. If you are using College labs, then, if there is a problem with the machine that you are using or with your account, you should contact helpdesk@tcd.ie. Note
that if the issue is a forgotten password, or if you are for some other reason locked out of your account, then you will have to go to ISS in person. If the problem is with Department of Computer Science facilities, then problems should be reported to help@cs.tcd.ie. The SCSS and College-wide services are quite distinct. In both cases, however, you should keep track of the reference number for your query that gets generated automatically in response to your message. Please make sure that you explore available online help pages and manuals (e.g. using the Unix command “man”, or support pages provided on the internal web sites) before sending a request for help with software issues. Broken or inoperable machines should be reported immediately. Do not share your password with anyone who is not part of the system support team.

4.1.5 Extra-curricular academic support

The Undergraduate Programming Centre This is an initiative offering further assistance towards conquering difficulties encountered in trying to master programming. It is not a place where you have your programs written for you, but it offers a variety of mechanisms to help you get over difficulties you might be having. It is FREE of charge and the web-site giving all details is http://www.scss.tcd.ie/misc/psc/

The Maths Help Room The Maths Help Room offers free assistance to students who are having difficulty with Mathematics, Statistics or related courses. It runs every week of term and at certain times out of term. The Maths helproom is a drop in centre, where you can bring in a maths or stats question and get some help. It is run by the School of Mathematics and further information is available at http://www.maths.tcd.ie/~mathshelp

4.1.6 Computer Science Component

The computing component of the CSL course is basically\(^2\) of the modules made up of the software (and maths) streams of the honors B.A. in Computer Science, together with some modules relating to computational linguistics. The computing component lacks some of the more hardware-related elements of the CS degree, their place being taken by other components of the CSL degree, namely linguistics and a particular language.

The following sections give some of the details of the modules contributing to the computing component. As many of these will be modules shared with ICS students, the handbook and web-pages for that degree programme should also be consulted

scss.tcd.ie/undergraduate/computer-science/assets/docs/ICSHandbook.pdf
scss.tcd.ie/undergraduate/computer-science

4.1.6.1 Junior Freshman CSL Syllabus

The syllabi are intended to give an overview of the course. More detailed information is available via online sources such as my.tcd.ie (for registered students only) or http://www.scss.tcd.ie/undergraduate/computer-science-language/jf

CSU11001 & CSU11002 Mathematics ECTS: 10, S1, S2, 3 hrs per week.

Mathematics is of interest to computer scientists due to the fact that it is both practical and theoretical in nature. Not only does it have a myriad of applications (e.g. in wireless communications, computer

\(^2\)It is also worth nothing that some modules contributed from outside of the CS department have a decidedly computational character, such as Computational Morphology
4.1. SCHOOL OF COMPUTER SCIENCE AND STATISTICS

graphics, machine learning techniques in computational linguistics), it is also of intrinsic interest to theoretical computer scientists. This module aims to develop the students' skills and abilities in the mathematical methods necessary for solving practical problems. One of the key objectives for this module is to introduce students to the learning styles needed for university level mathematics.

Amongst topics covered in S1 will be Linear algebra, Integration, The Newton-Raphson method and Taylor Series, while the the focus of S2 is so-called 'discrete' mathematics and mathematical logic, including set operations, discrete maths functions in Number Theory and Logic calculation that are used in computer science.

In both parts students will be encouraged to adapt their learning style to become more independent, self-motivated and reflective learners, with the skills needed for success at University level.

Lecturers: Merial Huggard and Hugh Gibbons.

**CSU11010 Introduction to Programming**  
**ECTS:** 10, S1, S2 4 hrs

This module provides an introductory course in computer programming. This course takes a practical approach to teaching the fundamental concepts of computer programming with a strong emphasis on tutorial and laboratory work and is an important vehicle for developing students analytical and problem-solving skills. It aims to give students an understanding of how computers can be employed to solve real-world problems. Specifically, this course introduces students to the object-oriented approach to program design and teaches them how to write programs in an object-oriented language (in this case Java).

Continuous assessment is composed of weekly laboratory and tutorial sessions and more substantial programming assignments. CSU11010 is assessed based on written examination and continuous assessment. A mark of 40% in both the written examination and the continuous assessment components must be attained.

Lecturers: Arthur-Hughes and Kenneth Dawson-Howe

**CSU11021 Introduction to Computing**  
**ECTS:** 5, S1, 2 hrs

Aims This module provides students with an introduction to the basic structure, properties and operation of microprocessor systems. By developing and executing simple assembly language programs, the module aims to give students an understanding of how programs execute on a microprocessor system. The module also encourages students to consider the relationship between high-level programming language constructs and their execution as sequences of instructions.

Students will also be given opportunities to develop their problem solving, programming and written communication skills by designing solutions to programming problems, implementing those solutions, first in the form of high-level programming constructs and then as assembly language programs, which must be documented and tested.

Assessment is by a combination of written examination and continuous assessment.

Lecture: Jonathan Dukes

4.1.6.2 Senior Freshman CSL Syllabus

Students take CSU22063 (10 ECTS) – which is specific to CSL – and four other modules which are shared with BA (mod) CS, namely MAU22C00 (10 ECTS), CS2011 (5 ECTS) and CS2012 (5 ECTS). The contents of these modules is briefly outlined below. Further details for CSU22063 can found

http://www.scss.tcd.ie/undergraduate/computer-science-language/sf

and for the BA (mod) CS modules:

http://www.scss.tcd.ie/undergraduate/computer-science/sf/

and for all currently registered students via my.tcd.ie
MAU22C00 Discrete Mathematics 10 ECTS, S1, S2, 3hrs per week
Specific topics addressed in the first semester include: The Principle of Mathematical Induction, Sets, Relations and Functions, Introduction to Abstract Algebra, Introduction to Formal Languages and Context-Free Grammars, Introduction to Graph Theory.
In the second semester, this module provides students with an introduction to a variety of topics, arising out of both Calculus, Geometry and Discrete Mathematics, that are of relevance in fields such as acoustics, image processing, computer graphics and cryptology. Specific topics addressed in this module include: Ordinary Differential Equations, Trigonometric Identities, Complex Exponentials and Periodic Sequences, Vectors and Quaternions, Introduction to Number Theory and Cryptography.
Assessment is by written examination and continuous assessment.
Lecturer: David Wilkins

CSU22010 Algorithms and Data Structures 10 ECTS, S1, S2, 4 hrs per week (inc. 1 hr lab)
The aim of the module is threefold (1) To teach effective programming and problem solving, using a core toolset of classical algorithms and data structures. (2) To introduce the methods for evaluating the performance and requirements of programs written by the students. (3) To promote effective software engineering by using well-established techniques for code modularity, structuring, debugging and readability, such as Design by Contract, and unit testing.
Topics covered include: analysis of source code to derive running time and space requirements; array and linked list implementations of stacks and queues; doubly linked lists; union-find; binary trees, binary search trees, balanced search trees, B-trees; hash tables; undirected, directed and weighted graph implementations using adjacency lists; recursion vs iteration; tree traversals; greedy algorithms; divide and conquer; graph algorithms; searching and sorting algorithms; Java generics; iterators; JUnit testing; Design by Contract
Assessment is based on a mixture of continuous assessment and a final exam.
Lecturers: Vasileios Koutavas and Ivana Dusparic

CSU22063 Intermediate Programming and Natural Language Processing 10 ECTS, S1, S2, 3 hours per week, 2 lectures, 1 lab session
In the first semester this modules aims to engender a mastery of the fundamentals of programming in C++, both building on, and differentiating from, prior experience with Java. In the second semester it likewise seeks to provide a solid grounding in the major concepts and algorithms used in Natural Language Processing, exploring many of these through implementations in C++. In the first semester, concepts and techniques will often be illustrated via examples pertinent to NLP; the concepts and techniques themselves have general applicability in other areas of software engineering.
Topic covered include

- Fundamentals of C++ (built-in types and coercion, pointers, arrays, reference parameters, STL containers string and vector, structs, classes, inheritance (illustrated by Qt library for GUIs), dynamic memory allocation and recursive data structures)
- Regular languages (finite state automata and transducers, properties and limitations of finite state methods - centre-embedding, C++ implementation of finite state automata)
- Context Free languages (applications to natural language and potential limitations crossed dependencies, bottom-up and top-down stack-based parsers, including backtracking, chart-based parsers. Properties of these parsers and their implementation in C++, long-distance dependencies and slash-grammars)
- Feature structures (untyped and typed features structures, C++ implementation via the LilFes library)
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- Brief intro to Probabilistic Methods in NLP, topic varying year to year, examples being the use of Hidden Markov models in speech recognition, or statistical machine translation

Assessment is based on an exam and on continuous assessment, mainly involving programming

CSU22L02 DCLRS ECTS: 5. S1 and S2. See \( ^3 \) §2.11.1

4.1.6.3 Junior Sophister CSL Syllabus

It is normal for students to spend this year studying abroad under the Erasmus/Socrates program. For students who remain in Dublin they continue to pursue a mixture of computer science, linguistics and a particular language. The subjects modules listed below are indicative of computer-science part of the syllabus (subject to timetabling constraints there is some scope for variation on this)

- STU22004 Applied Probability (S1, 5 ECTS)
- CSU34011 Symbolic Programming (S1, 5 ECTS)
- CSU33012 Software Engineering (S1, 5 ECTS)
- CSU33071 Compiler Design I (S1, 5ECTS)
- CSU33061 Artificial Intelligence I (S2, 5ECTS)
- CSU33013 Software Engineering Group Project (S2, 5ECTS), or
- CSU34016 Introduction to Functional Programming (S1, 5ECTS), or
- CSU33081 Computational Mathematics (S2, 5ECTS)
- CSU33LL3 DCLRS (S1,S2, 5 ECTS)

For module descriptions for the above modules, please see the appropriate links here:
http://www.scss.tcd.ie/undergraduate/computer-science/js/
and for all currently registered students via my.tcd.ie

4.1.6.4 Senior Sophister CSL Syllabus

Final year students in the CSL degree take the modules CSU34041, CSU44061, CSU44060, they undertake a project (worth 10 ECTs), and choose option modules (worth 10 ECTs). The project can be chosen from projects offered within the CS department and also from projects offered within the other streams of the degree course, namely linguistics and the three languages. See §5 for further details on past projects. Likewise the optional modules can be selected from the options offered within the CS department, or from those offered in the other streams of the degree course. Either two 5 ECTS options can be chosen or one 10 ECTS option.

Please note that in contrast to other years of the degree, those modules from the CS department that are taught in S1 have an exam in early January, rather than an exam in the summer. Modules from other departments continue to have their exams in the summer.

CSU34041 Information Management ECTS 5, S1, 3 hrs per week

This course is focused on the modelling of information and database system technology. More specifically, it focuses on state-of-the-art database technology, from both the user and systems perspectives. From a system engineering perspective, the course examines the concepts and algorithms for: transaction processing, concurrency control, metadata representation, semantic representation and active databases, recovery, database security policies, integration of databases on the web and emerging

\(^3\) Though appearing variously as CSU11L01/2202/3303/4404 this is one module attended by all
\(^4\) with the agreement of the course director
database technologies. From an information designers perspective, the course examines the theoretical model underpinning relational databases, functional dependency theory and normalisation (for information modelling), functional dependency modelling, object relational modelling, implementation of databases and database applications. Thus the course is intended to enable the students to design information models and implement these models in state of the art databases (relational and native web databases), as well as be able to analyse and evaluate approaches to information organisation, storage, transaction support and management.

Assessment is based on an exam and coursework.

**CSU44061 Machine Learning**  **ECTS: 5**, S1, 2 hours per week, plus a number of labs.

The module aims to give a working understanding of many of the main machine-learning techniques and their application to solve real-world problems. Techniques covered include: Machine Learning Basics (Datasets, Frameworks, Evaluation, Cross-validation and confidence intervals Overfitting/underfitting), Linear Regression, Logistic Regression, Support Vector Machines, Kernel Methods, k-Means Clustering and Mixture Models for Unsupervised Learning, Neural Networks, Deep Learning Algorithms, Use of gradient descent, and extensions for improved scalability (stochastic gradient descent etc), Probabilistic interpretations of ML algorithms, Maximum Likelihood and MAP estimators.

**CSU44060 Knowledge Representation and Automata**  **ECTS: 5**, S2, 3 hours per week, plus one hour of lab per week.

This module aim to give an in-depth introduction to some topics in AI. Topic covered include: use of description logics to express simple ontological constraints, application of finite-state methods to basic natural language processing tasks, evaluation of the effectiveness of different approaches to reasoning about change in simple domains, understanding the computational possibilities opened up by automata-theoretic approaches to reasoning.

Assessment is based on both an exam and continuous assessment elements.

Lecturers: Tim Fernando

**CSU44LL4 DCLRS**  **ECTS**: 5. S1 and S2. See \[^{5}\] \$2.11.1

**Option Modules**  The option modules can be selected from the options offered within the CS department, or from those offered in the other streams of the degree course, subject to them amounting to 10 ECTS in total (and the agreement of the course director). These options are subject to some change year on year. The following list is indicative of options offered by the CS department that have been taken recently:

- **CSU44062 Advanced Computational Linguistics**: Machine Learning techniques in Machine Translation, Speech Recog, Topic Modelling. (S1, 5 ECTS)
- **CSU44001 Fuzzy Logic** (S1, 5 ECTS)
- **CSU44004 Formal Verification Techniques** (S1, 5 ECTS)
- **CSU44012 Topics in Functional Programming** (S1, 5 ECTS)
- **CSU44021 Advanced Computer Architecture** (S1, 5 ECTS)
- **CSU44031 Mobile Communications** (S1, 5 ECTS)
- **CSU44052 Computer Graphics** (S1, 5 ECTS)

[^5]: Though appearing variously as CSU11L01/2202/3303/4404 this is one module attended by all
4.2. THE CENTRE FOR LANGUAGE & COMMUNICATION STUDIES

- CSU44053 Computer Vision (S1, 5 ECTS)

Further details on the CS modules should be available via

http://www.scss.tcd.ie/undergraduate/computer-science/ss/

and for all currently registered students via my.tcd.ie

CSU44062 Advanced Computational Linguistics (S1, 5 ECTS) The aim of this module is to give a grounding in so-called unsupervised machine learning techniques which are vital to many language-processing technologies including Machine Translation, Speech Recognition and Topic Modelling. Whilst studied in these contexts, the techniques themselves are also used much more widely in data mining and machine vision for example.

Amongst the topics studied will be: probabilistic essentials such as the chain rule and relative frequencies as maximum likelihood estimators; the (source|target) x target formulation of Statistical MT and idea of learning ‘hidden’ alignment variables between sentence pairs using the Expectation Maximisation (EM) algorithm; exponential vs feasible implementations of EM training for SMT; the Hidden Markov Model (O|S) x S formulation of Statistical Speech Recognition; brute-force EM for learning HMM parameters and the efficient Baum-Welch algorithm to avoid exponential cost; Topic Modelling as a technique to infer latent ‘topic’ variables for documents. ; techniques to learn parameters of these models. In each case, alongside the explanation of the algorithms, there will be practical work, either developing instances of them, or deploying existing implementations and running them on data sets to concretely see their properties.

Lecturer: Martin Emms

CSL Final Year Project Note the final year project for CSL is worth 10 ECTS. For the BA CS, it is worth 20 ECTS. The project can be chosen from projects offered within the CS department and also from projects offered within the other streams of the degree course, namely linguistics and the three languages. See §5.2 for further details on what a project involves, how its topic is chosen, and some information of projects that have been undertaken in past year.

4.1.7 Additional Information

It is easiest to find additional written information via links from degree, departmental, faculty and college web links.

- http://www.scss.tcd.ie/undergraduate/computer-science-language/
- http://www.cs.tcd.ie/research_groups/clg/
- http://www.tcd.ie/research/faculty/
- http://www.tcd.ie/

4.2. The Centre for Language & Communication Studies

4.2.1 General

The Centre for Language and Communication Studies (CLCS) is part of the School of Linguistic, Speech and Communication Sciences and is located in the Arts Building on level 4. The Centre is responsible for research and teaching in theoretical linguistics, applied linguistics, phonetics and speech science. It contains a phonetics laboratory and also administers language teaching and self-access facilities.
The Centre has a full-time academic staff of 10, with an Executive Officer, and a technician. In addition there are a number of research associates working on the Centre’s research projects. The following is some basic information:

Head of CLCS: Prof. Christer Gobl
Departmental office: Room 4091, Arts Building
Office hours:
  Monday–Thursday 10:00am-9:00pm
  Friday 10:00am-5:00pm
Office hours will always be posted on the CLCS office door.
Executive Officer: Shane Hayes
Telephone: 896 1560

Notices for CSL students are posted on a noticeboard outside the Centre office, Room 4091.

4.2.2 Research

The Centre conducts research in theoretical linguistics, in applied linguistics, in phonetics and in speech and language processing. The research interests of individual staff members are listed at the end of this section. In addition to staff research, there are Ph.D. and M.Litt. students working in each of these areas, and each year the Centre admits up to 70 M.Phil. students, who conduct research for their dissertations in linguistics, applied linguistics, English Language Teaching and speech and language processing.

4.2.3 Teaching

The Centre’s CSL modules are listed below. In addition the Centre provides modules in linguistics for undergraduates in a wide range of degrees including the various modern languages programmes and clinical speech and language studies. At the graduate level, CLCS runs four Masters degrees: M.Phil. in Linguistics, in Applied Linguistics, in Speech and Language Processing and in English Language Teaching. As mentioned above, there is also a wide range of doctoral research conducted at the Centre.

4.2.4 Modules

CSL modules within the Centre normally last one term at a rhythm of two hours per week. They are assessed by a combination of written examination and continual assessment, which may be a written essay, project work, or practical exercises, depending on the module topic.

Continuous Assessment

(a) All continuous assessment assignments **MUST** be submitted **by 3pm on the due date** and signed in at the CLCS Office.

(b) Students must submit an identical electronic copy to TurnItIn or Blackboard, as indicated by the lecturer, by the same deadline.

(c) Deadlines can only be changed by direct consultation with the staff member concerned, **IN AD-**
VANCE of the submission date. It is the student’s responsibility to ensure that agreement regarding
any extension of a deadline has been reached with the relevant staff member. In the event of late
submission of an assignment without such agreement, a penalty will apply. Marks will be reduced in
accordance with the extent of the delay. 5 marks will be deducted if the assignment is up to one week
late and 10 marks will be deducted if the assignment is between one and two weeks late. Assignments
will not normally be accepted more than 14 days after the submission date; any request for a
submission after this time must be made in consultation with the students College Tutor and
can only be allowed on the basis of illness (medical certificate required) or similar personal
circumstances.

NB: It is not possible to pass a CLCS module without submitting all of the
assigned coursework.

Below is a year by year listing of the modules with indicative descriptions of their aims and contents.
Please note that in addition to the module descriptions appearing here, further more detailed informa-
tion is likely to be accessible via departmental web-pages and (for currently registered students) via
my.tcd.ie.

4.2.4.1 Junior Freshman Year

LIU11001 Language, The Individual and Society 5 ECTS, S1, 2 hours per week
The aim is to introduce the student to issues relating to individual language acquisition and use, to
social dimensions of language, to language and thought, and to the changing fortunes of specific
languages. Corresponding to the breadth of scope, this module is delivered by an unusually large series
of lecturers:
Prof. Lorna Carson, Prof. Gessica De Angelis, Prof. Pat Matthews, Prof. Jeffrey Kallen, Prof. Breffni
O’Rourke, Prof. Sarah OBrien
It is assessed by one 3,000-word essay assignment.

LIU11002 Introduction to Syntax (5 ECTS, S2)
The aim of this course is to introduce the student to basic techniques of syntactic analysis (the
generative approach to language; the basics of phrase structure grammar; lexical information about
heads; recursion and clauses; dependency relations in syntax; movement rules).
Assessment involves a class test (25%) and summer examination (75%).

LIU11003 Introduction to Phonetics and Phonology 5 ECTS, S2, 2 hrs
This module gives an introduction to articulatory phonetics and of phonemic analysis. Topic covered
include: The organs of speech production, an articulatory classification of consonants and vowels,
the International Phonetic Alphabet, the procedures of phonemic analysis, phonemic and phonetic
transcription.
Assessment is via exercises (50%) and a mini-project (50%); there is no examination.

4.2.4.2 Senior Freshman year

LI2034 Syntax and Semantics 5 ECTS, S1, 2 hrs
This module advances understanding in theoretical linguistics in the areas of syntax and semantics.
Concerning syntax it aims to give students a grounding in syntactic theory and some experience of the
syntactic analysis of English, covering topics such as: Constituent structure; heads and complements;
X-bar phrase structure; grammatical functions; syntactic rules. Concerning semantics it aims To
introduce students to the application of logical (or truth-conditional) semantics to natural language, covering topics such as: Denotation, truth and meaning; first and second order logic; quantifiers in English; extending logics for time, mood and aspect; intensionality; presupposition and context.

Assessment two assignments of 2,000 words each.

**LI2036 Computational Morphology and Statistics**  5 ECTS, S1, 2 hrs per week

One aim of this module is to serve as an introduction to the theory of finite-state methods for NLP and their use in analysing and generating natural language morphologies, including: Practical experience of using the Xerox Finite-State Tools to analyse and generate the morphology of English and other languages.

A further aim of this module is to introduce students to the main statistical concepts and procedures required for the collection and analysis of quantitative data in linguistics and language study. Through a hands-on, practical introduction to data analysis in SPSS students are facilitated in learning for example how to: describe data meaningfully using appropriate statistics, carry out statistical tests in order to explore relationships among groups and differences between groups (e.g. chi-square; correlation; t-tests) and to understand when to use each test and how to interpret data output and results.

Assessment is based on practically oriented coursework alone (50% morphology, 50% statistics).

**LI2035 Speech Science and Phonetics**  5 ECTS, S2, 3 hrs

This module introduces intrumental phonetics, studying instrumental investigative techniques and their employment (where possible/relevant) to provide a more in-depth look at the mechanisms of speech production and their exploitation in languages. This leads onto an introduction to the theoretical and technical of foundations of speech science, focussing particularly on the acoustic nature of the speech signal, covering psychoacoustics, the functions of the peripheral auditory system and an introduction to the acoustic theory of speech production. The course also deals with fundamental processing techniques for analysing speech, including short-term spectral analysis, such as spectrograms and spectral sections.

Assessment is based on coursework only.

### 4.2.4.3 Junior Sophister Year

Students spend their Junior Sophister year abroad as part of a Erasmus exchange, and continue to study the linguistic and computational linguistic subject areas that featured in the first two years. For students of French and German, this will happen through the medium of their studied language.

When the JS is taken in Dublin the following modules are taken

- LI2307 Aspects of Written Language (S1, 5 ECTS) Assessment is by 2 essays of 2,000 words each
- LI2303 Language Learning (S1, 5 ECTS) Assessment is by 1 3,000-word assignment
- LI2301 Aspects of vocabulary (S2, 5 ECTS) Assessment is by 1 3,000-word assignment
- LI2304 Sociolinguistics (S2, 5 ECTS) Assessment is by 1 end-term assignment

### 4.2.4.4 Senior Sophister Year

**LI4031 Speech Analysis and Synthesis**  5 ECTS, S1, 2 hrs per week

Building on the SF module, this modules aims to teach students how the speech production process can be described, modelled and synthesised, and covers such topics as basic digital signal processing; speech analysis techniques including DFT, LPC, inverse filtering and voice source model matching; voice quality description and modelling; speech synthesis systems.

Assessment is based on one 3,000-word assignment.
**LI4032 Computational Linguistics** 5 ECTS, S2, 3 hrs per week

The aim of this module is to introduce students to current computational models of syntax and semantics. One completing this students will, amongst other things be able to construct informed arguments in defence of particular constituent structure analyses, to determine the formal expressivity of infinite abstract languages and natural languages, relate formal expressivity to facts of human cognition and engineering artefacts in computational linguistics, and design, implement and evaluate computational grammars for natural language in response to test-suites representative of linguistic phenomena of interest in the literature.

Assessment involves a series of computational grammar development tasks and exercises with formal language theory, towards characterizing natural language syntax.

**Option and Project**  As noted in 4.1.6.4, CSL students undertake a final year project (worth 10 ECTS), and choose one or more Senior Sophister options (amounting to 10 ECTS in total). Both project and options may be in linguistics or have a substantial linguistics element.

A option module will be

- **LI4034 Second Language Acquisition (S1, S2, 10 ECTS)**  Assessment will be by project (over both semesters) and exam.

If undertaken in linguistics, the final year project module name is

- **LI4036 Fourth Year Project (S1, S2, 10 ECTS)**

### 4.2.5 CLCS Staff and Research Areas

**Professor in Linguistics:** J.I. Saeed, BA, M.A., Dip.Ling., Ph.D (London), FTCD. **Research:** grammatical theory; semantics and pragmatics; Afroasiatic linguistics. **Room:** Arts Building 4092. **Telephone:** ext. 1505. **E-mail:** jsaeed@tcd.ie

**Professor in Phonetics:** A. Ní Chasaide, Maîtrise ès Lettres (Bordeaux), MA, PhD (Bangor, North Wales), FTCD. **Research:** experimental phonetics, acoustic and articulatory analyses of coarticulation, with particular focus on Irish, voice quality. **Room:** Arts Building 3038/4074a. **Telephone:** ext.1249/1348. **E-mail:** anichsid@tcd.ie

**Associate Professor in Linguistics and Phonetics:** J. L. Kallen, B.A. (W. Wash. U.), M.A. (U. Wash; TCD), Ph.D. (TCD), FTCD. **Research:** The English language in Ireland, sociolinguistics, phonological theory, morphology, first language acquisition, semantics **Room:** Arts Building 3139. **Telephone:** ext 1495. **E-mail:** jkallen@tcd.ie

**Associate Professor:** Dr C. Gobl, MSc. **Research:** voice source analysis and modelling; voice quality; speech perception; speech synthesis; speech analysis/coding systems. **Room:** Arts Building 4038/4074a. **Telephone:** ext. 2592/1348. **E-mail:** cegobl@tcd.ie

**Associate Professor in Computational Linguistics:** C. Vogel, BA, MSc, MA, Ph.D. (Edinburgh), FTCD. **Research:** formal syntax and semantics, Head-driven Phrase Structure Grammar, robust language processing, language evolution, forensic linguistics. **Room:** O’Reilly Institute LG16. **Telephone:** ext. 1765 **E-mail:** vogel@tcd.ie

**Associate Professor in Applied Linguistics and Manager of Language Learning Technologies:** Dr B. O’Rourke, BA, MPhil., PhD. **Research:** cognitive and socio-cultural approaches to second language acquisition; metalinguistic knowledge in language learning; computers in language learning; autonomy in language learning; written language and literacy; psycholinguistics and language media. **Room:** Arts Building 3041 **Telephone:** ext. 3162 **E-mail:** breffni.orourke@tcd.ie

**Assistant Professor:** Dr. G. De Angelis. **Research:** Second/Third Language Acquisition, Cross-linguistic Influence and Multilingualism. **Room:** Room 4064, Arts Building. **Telephone:** 896 1106 **E-mail:** gessica.deangelis@tcd.ie
Assistant Professor in Computational Linguistics: Dr E. Úi Dhonnchadha Research: natural language processing; corpus linguistics. Room: Arts Building 3159 Telephone: ext. 2615 E-mail: uidhonne@tcd.ie

Assistant Professor in Applied Linguistics: Dr. Sarah O’Brien. Research: Linguistic and Cultural Acquisition in Migrant Communities; Dual Language Education; Conversational Discourse Room: Arts Building, 3040 Telephone: ext. 1626

Assistant Professor and Language Modules Coordinator: Dr L. Carson Research: second language learning; multilingualism/migration. Room: Arts Building 3039 Telephone: ext. 4035 E-mail: carsonle@tcd.ie

Assistant Professor in Deaf Studies: Patrick Matthews. Research: linguistics of ISL, Deaf education, Deaf community and culture, Teaching Methodologies, Assessment Methods, orthography for Irish Sign Language. Email: matthep@tcd.ie

Ussher Assistant Professor in Irish Speech and Language Technology: Neasa Ní Chiaráin, B.Sc. (D.C.U.), M.Sc. (N.U.I.), PH.D. Research: speech and language technology for Irish; Irish language synthetic voices; computer-assisted language learning. E-mail: Neasa.NiChiarain@tcd.ie

4.3 Roinn na Gaeilge is na dTeangacha Ceilteacha

4.3.1 Ginearálta

Roinn de chuid Scoil na dTeangacha, na Litríocht Íosóis na nEalaíon, na nDaonnachtaí is na nÉolaíochtaí Sóisialta is ea Roinn na Gaeilge is na dTeangacha Ceilteacha. Tá an Roinn suite in Áras na nEalaíon, mar a bhfuil Oifig Cheann na Roinne i Seomra 4061 agus Oifig an Róinna i Seomra 4055. Tá ceathrar ar fhoireann acadúil lánaímseartha na Roinne, mar aon le léachtóirí páirtaimseartha, teagascóirí páirtaimseartha agus rónaí.

4.3.1.1 Teagasc

Seachas an cúrsa Gaeilge le haghaidh na céime in Éolaíocht Ríomháire agus Teanga (ERT/ TR039), soláthraíonn an Roinn na cúrsaí fochéime seo a leanas:

- LeathMhodhnoireacht sa Nua-Ghaeilge (TR001)
- Modhnoireacht sa Luath- is sa Nua-Ghaeilge (TR022)
- An cúrsa ‘Litriocht agus Teanga na Gaeilge’ agus cúrsa bunGhaeilge do mhic léinn eacchhrannacha.

Mar chuid den chúrsa modhnoireachta sa Nua-Ghaeilge, müintear Gaeilge na hAlban ó thosach; mar chuid den chúrsa modhnoireachta sa Luath-Ghaeilge, müintear an Mheán-Bhreatnais is an Nua-Bhreatnais ó thosach agus tugtar léachtai ar litriocht na Breataine.

Soláthraíonn an Roinn cúrsaí iarchaíte reagaisc le haghaidh Dioplóma sa tSean-Ghaeilge agus le haghaidh Míatareachta (M.Phil.) sa Luath-Ghaeilge.

4.3.1.2 Taighde

Is iad na gnéithe de léann na Gaeilge is mó is spéis le baill na Roinne faoi láthair ná: teangeolaíocht chomparáideach na dteangacha ceilteacha, stáir na Gaeilge, seandlíthe na hÉireann, an Nua-Ghaeilge Chlasaiceach, gnéithe de litriocht na Gaeilge, béaloideas na hÉireann, teanga agus litriocht Ghaeilge na hAlban. Tá mic léinn Éireannacha agus eacchhrannacha ag déanamh taighde faoi stiúir bhaill na Roinne faoi choinne na gcéimeanna M.Litt. agus Ph.D.
4.3. ROINN NA GAEILGE IS NA DTEANGACHA CEILTEACHA

4.3.2 Eolas Eile

Tabharfar liosta iomlán den fhoireann teagaisc, dá seomrá, dá n-uimhreacha teileafón, dá seoltaí riomhphoist agus dá n-ábhair taighde inár ndíadh anseo.

Soláthraíonn an Láirionad Staidéar Teanga is Cumarsáide (Oifig: Áras na nEalaíon 4091) deiseanna féinteagaisc Gaeilge.

Tá Cartlann Bhéaloidis i Seomra Henry Flood (Áras na nEalaíon 4058) mar a bhfuil cóip de phríomhbhailiúcháin Choimisiún Béaloïdes Éireann ar mhicreascannáin.

Moltar do mhic léinn páirt a ghlacadh i saol bríomhar phobal Gaeilge an Choláiste agus dul go rialta chuig Seomra na Gaeilge.

Is í Áine Ní Shúilleabháin Oifigeach Gaeilge an Choláiste: fón 3652, riomhphost gaeloifig@tcd.ie, idirlíon www.tcd.ie/gaeloifig

4.3.2.1 Deontais Ghaeltachta

Bronntar uimhir áirithe deontas Gaeltachta i ngach bliain acadúil. Chun cur isteach orthu ní móir do mhic léinn iarratas a dhéanamh ar fhóirm faoi leith, agus teacht chuig agallamh nó chuig cruinniú a fhogaítear. Aon duine a roghnaítear dá bharr sin, beidh sé/si i dteideal ar dheontas ach na coinníollacha cuí a chomhlíonadh.

4.3.3 Na Cúrsaí Gaeilge

Tugtar an t-eolas seo le lèargas ginearálta a thabhairt ar na cúrsaí. Féadann léachtóirí mionathruithe a dhéanamh, ach ní dhéanfar e sin gan fógra a thabhairt do na mic léinn roimh ré.

4.3.3.1 Cúrsa na Chéad Bhliana

Léacht (IRU11411): Pobal agus teanga

- Léachtóir: Pádraig de Paor.
- Fad: 1 leathbhliain, uair an chloig sa tseachtain.
- Aidhm: Léargas a thabhairt ar stair sheachtrach na Gaeilge le cúpla céad bliain anuas.
- Saothar: Scrúdú ranga ag deireadh an téarma.
- Téacs: Leabhráin clóscriofa de chuid na Roinne.
- ECTS: 5

IRU1144Y Ceart agus labhairt na teanga

- Léachtóir: Micheál Hoyne
- Fad: 2 leathbhliain, dhá uair an chloig sa tseachtain.
- Aidhm: Ceart na Gaeilge scríofa agus labhartha a mhúineadh.
- Saothar: Ceacht a scríobh gach seachtain; scrúdú scríofa agus béaltriail ag deireadh na bliana.
- Téacs: Le fógairt
- ECTS: 10
4.3.3.2 Cúrsa an Dara Bliain

Léacht (IRU22432): Gáidhlig.

- Léachtóir: Eoin Mac Cáithaigh.
- Fad: 1 leathbhliain, 3 uair an chloig sa tseachtain.
- Aidhm: Bunchumas sa Gáidhlig a mhúineadh.
- Saothar: Ceachtanna a scríobh go rialta; scrúdú ag deireadh na bliana.
- Téacs: B. Robertson and I. Taylor, Complete Gaelic
- ECTS: 5

IRU2244Y Ceart agus labhairt na teanga

- Léachtóir: Eimear Connick.
- Fad: 2 leathbhliain, dhá uair an chloig sa tseachtain.
- Aidhm: Slacht breise a chur ar Ghaeilge scríofa agus labhartha na mac léinn.
- Saothar: Ceachtanna minice; scrúdú scríofa agus béaltair ag deireadh na bliana.
- ECTS: 10

4.3.3.3 An Tríú Bliain - thar lear

Caithfidh na mic léinn an bhliain seo in Albain. Cuirfear sonraí an chúrsa ansiuíd ar fáil do na mic léinn faoi dheireadh an dara bliain. Sa chás nach mbonn áit ar fáil in Albain, déanfaidh mic léinn dhá chúrsa: (i) IR3448 Teanga (Gaeilge agus Gáidhlig), 2 leathbhliain, 10 ECTS; agus (ii) cúrsa roghnach, 1 leathbhliain, 5 ECTS.

4.3.3.4 Cúrsa an Cheathrú Bliain

Léacht (IRU44411): Gáidhlig.

- Léachtóir: Eoin Mac Cáithaigh.
- Fad: 1 leathbhliain, uair an chloig sa tseachtain.
- Aidhm: Slacht breise a chur ar Ghaeilge na mac léinn.
- Saothar: Ceachtanna minice; scrúdú ranga ag deireadh an téarma.
- Téacs: Seachadadh clóscríofa.
- ECTS: 5

Ranganna teagaisc (IRU4440Y): Ceapadóireacht.

- Léachtóir: Eoin Mac Cáithaigh.
- Fad: 2 leathbhliain, 2 uair an chloig sa tseachtain.
- Aidhm: Slacht breise a chur ar Ghaeilge scriofa agus labhartha na mac léinn.
- Saothar: Ceachtanna minice; scriofa agus béaltriail ag deireadh na bliana.
- ECTS: 10

Maraon leis na modúil éigeantacha thus, tá cead ag mic léinn staidéar a dhéanamh ar cheann de na modúil roghnach seo a leanas:

- Roghanna éagsúla. (Liosta le fáil ó oifig Roinn na Gaeilge.)
4.4. THE DEPARTMENT OF GERMANIC STUDIES

4.3.4 Teagmháil

- Ceann na Roinne: Eoin Mac Cárthaigh, seomra 4061, emaccart@tcd.ie, 01-8963516
- Riarthóir na Roinne: Caoimhe ní Bhraonáin, seomra 4055, nibhraoc@tcd.ie, 01-8961450.

4.4 The Department of Germanic Studies

4.4.1 General Information

The Department of Germanic Studies, along with the other departments of modern languages, is part of the School of Languages, Literatures and Cultural Studies within the Faculty of Arts and Humanities. Currently, the Department is involved in five different degree programmes including the German variant of Computer Science and Language (CSLG), the Two Subject Moderatorship (TSM), European Studies (ES), Law and German (LG) and Business Studies and German (BSL).

The Department is located on Level 5 of the Arts Building.

Full details about the Department can be downloaded from the Departmental website at www.tcd.ie/Germanic_Studies.

Head of Department: Professor Mary Cosgrove

Secretary: Ms. Natalie Wynn and Ms. Amanda Hopkins

Office: Room 5065, Arts Building

Office Hours: TBC, please check notice on door

Telephone: (353 1) 896 1373

Fax: (353 1) 896 3762

Co-ordinator for the German variant of Computer Science and Language (CSLG): Katrin Eberbach

Office: 5080, Arts Building

Office hours: by appointment

Telephone: (353 1) 896 3469

Email: eberback@tcd.ie

Information for CSLG students is displayed on the departmental noticeboards, which are organised by year-group, in the corridor beside room 5065.

On the departmental website you will find further important information on how to make the most of your language learning, how to study effectively, and how to write an essay. You should download these documents and refer to them regularly.

Developing Study Skills  To keep on top of your work you will need to develop good study skills. As part of your undergraduate study, we will be helping you to develop important soft or transferable skills such as planning, time management and multi-tasking so that you can manage your learning more effectively. These skills are life-skills and are as critical for study as they are for the world of work. When you are planning your study time, try to remember that for every hour of class, you should be doing at least two to three hours of private study.
4.4.2 Teaching

CSLG students share a number of core language modules with students from the other programmes offered by the Department of Germanic Studies. Modules are typically split into a number of groups, and CSLG students should take particular care, when reading the departmental noticeboards, to find out which modules and groups are intended for them.

4.4.3 Research

Members of the Department are all actively involved in research, and full profiles are given in the Departmental General Handbook and on the department’s website: http://www.tcd.ie/Germanic_Studies/staff/.

Most colleagues are involved primarily in literary research, but the Department also has interests in areas of linguistics and intercultural studies.

4.4.4 Your representatives in the Department

Besides the CSL Management Committee, CSL student representatives are also entitled to attend the Germanic Studies Departmental Committee, which is a forum for conveying information between students and staff (and vice versa). The Departmental Committee meets at least once in each semester and addresses student concerns about any aspect of the course which may arise, as well as disseminating information about scholarships, schemes for travelling abroad and other issues. One representative from each year of each course may attend. If the official CSL representative for any given year is not a student of German, a specifically CSLG student may be elected to serve on this Committee.

4.4.5 Modules

In the following sections there is a year by year listing of the modules with indicative descriptions of their aims and contents.

The descriptions of modules given here are intended as general overviews, and details may be changed by the lecturers concerned, subject to consultation with the students. Modules are offered subject to the availability of staff. Please note that in addition to the module descriptions appearing here, further more detailed information may be accessible via departmental web-pages and (for currently registered students) via my.tcd.ie.

German is normally the language of instruction in the Department. All students should own at least one dictionary and a grammar of German. In the first years, the recommended dictionary is Langenscheidts Großwörterbuch Deutsch als Fremdsprache (a dictionary all in German, but designed for learners of German), and/or a large German-English and English-German dictionary such as The Collins German Dictionary. The recommended grammar for students in all years is Hammer’s German Grammar and Usage, rev. ed. by Martin Durrell, publ. Arnold. In the first year, however, students will work with a simpler grammar book with exercises, Martin Durrell et al., Essential German Grammar, (London: Arnold 2002).

Attendance at all the modules described here is compulsory. It is the general practice of the Department to expect students to submit one piece of written language work per week in the Freshman years. As a minimum, in all years students are required to submit at least two-thirds of all the work set on any module, and to attend two-thirds of all classes held. Experience shows that because language learning is a skill, students who do not complete set course work regularly tend to perform poorly at their examinations.

Study Weeks: Week 7 of MT and Week 7 of HT.
**Procedures for submitting work and penalties for late submission:** JF and SF students must deposit assessed work (e.g., essays, projects) in the locked mailbox beside the departmental office (Room 5065) by the specified time. A list of submission dates and times is included in this handbook. The mailbox is emptied at 12 noon on submission dates. JS & SS students must sign in all assessed work in the Departmental Office at the specified times and on the specified sheet. The Departmental Executive Officers will countersign the sheet. The Department takes no responsibility for work that is handed in or left in the office without signing and counter-signing.

In case of accident or loss, all students should keep hard and disk copies of all assessed work. You are also required to submit any assessed work as an e-mail attachment (Word) so that it can be run through anti-plagiarism software.

Assignment extension forms are available from an envelope attached to the Departmental Office window. If you are granted an extension, a form must be completed and signed by the appropriate lecturer and then attached to your work. There are penalties for late submission of work without an extension. Up to one week’s lateness incurs a penalty of 10% marks, up to two weeks’ lateness 20% marks and after that 0 will be awarded.

A full list of assessment deadlines is posted on the noticeboard and can also be downloaded from the departmental website.

The Department sets aside two days after the publication of the annual examination results when you can discuss your scripts with members of staff. Please keep an eye on the notice board for dates.

**Guide criteria for awarding marks and classes:** A full list of assessment deadlines is posted on the noticeboard and can also be downloaded from the departmental website.

The Department sets aside two days after the publication of the annual examination results when you can discuss your scripts with members of staff. Please keep an eye on the notice board for dates.

**Guide criteria for awarding marks and classes:** Full details of criteria for awarding marks and classes are provided on the departmental website.

### 4.4.5.1 Junior Freshman

There are two modules

- **LANGUAGE FLUENCY** (10 ECTS)
  - GRU1100Y German language (2 hrs. tutorial and 1 hr. lecture per week all year), plus Spoken German (1 hr. per week all year)

- **LANDESKUNDE** (5 ECTS)
  - GRU11011 German Area Studies (2 lectures per week, S2 only)

For further information about the content of these modules and their assessment details please refer to my.tcd.ie. Note that since modules are weighted according to their credit value, the German component taken as a whole makes up 25% of the total CSL annual mark.

### 4.4.5.2 Senior Freshman Year

There are two modules:

- **GERMAN LANGUAGE FLUENCY** (10 ECTS)
  - GRU2200Y SF German Language (2hrs. per week), Spoken German (1 hr. per week)
CHAPTER 4. CONTRIBUTING DEPARTMENTS

• GERMAN CULTURAL HISTORY (5 ECTS)
  - GRU22051 (2 lectures per week, S1 only)

For further information about the content of these and their assessment details please refer to my.tcd.ie. Note that since modules are weighted according to their credit value, the German component taken as a whole makes up 25% of the total CSL annual mark.

SCHOLARSHIP: Students take a 90-minute written examination paper in language fluency. This will normally consist of an essay to be written in German on a topic of contemporary interest. There is also a 15-minute oral, on any aspect of the course.

4.4.5.3 Junior Sophister Year

Students spend their JS year abroad under an approved Erasmus programme. The German universities with which contacts are currently available are Bielefeld, Bremen, Karlsruhe, Osnabrück, Potsdam, Trier, Saarbrücken, Tübingen, Stuttgart and Vienna. A separate handbook dealing with the Erasmus year appears in early January to help students choose which university to attend. The year co-ordinator is Dr Carl Vogel, Computer Science and Statistics.

4.4.5.4 Senior Sophister Year

There are two compulsory modules

• GERMAN LANGUAGE FLUENCY (10 ECTS)
  - GRU4400Y 2 hours per week all year; 1 hour per week grammar tutorial all year.
• TRANSLATION (5 ECTS)
  - GRU44012 2 hrs per week, S2 only

Optional Modules: There may also be possibilities to pursue additional optional modules. As these are subject to change from year to year, please see the departmental noticeboard.

For further information about the content of final year modules and their assessment details please refer to my.tcd.ie. As in other years, modules are weighted according to their credit value. The compulsory German modules therefore make up 25% of the final year mark, and this percentage will be larger should further optional modules be taken.

4.5 Department of French

4.5.1 General

The Department is one of the seven disciplines that constitute the School of Languages, Literatures and Cultural Studies. The Department of French has a full-time academic staff of ten, supported by a number of part-time teachers, one full-time and two job-share executive officers. It is located on Level 4 of the Arts Building.

Head of Department: Professor Michael Cronin

Executive Officers: Ms. Mary Kelly - Room no 4109, Ms. Sinead Doran - Room no 4109, Ms. Tracy Corbett - Room no 4089

4.5. **DEPARTMENT OF FRENCH**

Telephone: (353 1) 896 1553 and 896 1333

Fax: (353 1) 671 7118

Dr Rachel Hoare, the departmental CSL co-ordinator can be contacted at: 896 1842 (and rmhoare@tcd.ie). Information for CSL students is displayed on the departmental noticeboards, which are organised by year-group, in the corridor beside room 4111. Dr Rachel Hoare will normally be your first point of contact.

4.5.2 **Teaching**

The Department is involved in five other degree programmes besides CSL. These are Two Subject Moderatorship (TSM), European Studies (ES), Law and French (LawF) Business Studies and a Language (BSL), and Middle Eastern and European Languages and Cultures (MEELC). CSL students share a number of core language modules with students from these other programmes. As a result of the large number of programmes run by the department, modules are typically split into a number of groups, and CSL students should take particular care, when reading the departmental noticeboards, to find out which modules and groups are intended for them.

4.5.3 **Research**

Members of the Department are all actively involved in research in literature, linguistics and French civilization.

4.5.4 **Books**

Book purchase is the personal responsibility of students. Books purchased in the Junior Freshman year will be relied upon during the first year, and throughout the degree programme.

All books prescribed are available from International Books, 18 South Frederick Street. It is also possible to order books over the Internet from [http://www.bol.fr](http://www.bol.fr) or [http://www.fnac.fr](http://www.fnac.fr) or [http://www.amazon.fr](http://www.amazon.fr)

The following books are required:

- Oxford-Hachette French Dictionary

Also recommended:


**JF students must also download the following dossier from the departmental website:**

- Language II: Composition & Comprehension (classes with lecturer)
4.5.5 JF CSLF Language Programme

Students attend five hours of language teaching weekly, two lectures and three classes. All five hours form an integrated course, which aims to develop a wide variety of language skills, written and oral, receptive and active. All students are required to attend weekly language classes, and submit weekly written assignments.

FRU11001 & FRU11002 French Language 1  10 ECTS; S1, S2; 3 hours

Aim: To provide a foundation of basic grammatical concepts and terminology relating to the French language; and to develop grammatical precision in written and oral expression.

Content: The content of the module is French grammar, written composition, and oral production. This will involve short but accurate narrative and descriptive texts in French on contemporary topics and topics covered in class, the demonstration of an ability to understand French through a variety of different media, including radio and news broadcasts, lectures and discussions, the preparation and delivery of short oral presentations on topics relating to contemporary France and francophone cultures, engagement in conversations on these topics and an awareness of different registers. The format of the module is one grammar lecture, one tutorial (grammar and composition), and one oral class.

Assessment: Assessment is based on a mixture of continuous assessments and examinations.

Written exam (34%): A two hour exam testing grammar and composition, comprised of:
- exercises in grammatical analysis;
- cloze test;
- exercises on specific points of grammar;
- a short composition.

Oral exam (33%) A 15-minute oral examination, which will include a five-minute expos on a topic arising from the course leading to a more general conversation. A list of Oral topics will be posted up to one week prior to the examination. Students choose one.

Continuous Assessment (33%) An overall average for the year is calculated on the basis of 8 pieces of submitted written work.

FRU11022 French and Francophone Cultures  ECTS 5; S2; 1 hour;

Aim: This module aims to introduce students to a number of aspects of French and Francophone cultures, and to important historical periods that influenced the creation of modern France. Each of these topics will be introduced in the lecture, and further examined in tutorials through reading comprehension activities.

Content: The content of the module is French and Francophone cultures. The format of the module is one lecture and one tutorial (reading comprehension). This involves

- Becoming knowledgeable in key aspects of French and Francophone cultures.
- Recalling key aspects of France, its recent history, its institutions, its political life, and its lifestyles.
- Understanding French through a variety of different media, including radio and news broadcasts, lectures and discussions.
- Engaging in reading comprehension activities across a variety of texts in French.

Assessment: Aural exam, in-class assessment (reading comprehension)
4.5.5.1 Continual assessment:

As you can see from the Language 2 Composition and Comprehension dossier, you are required to submit a piece of written work (usually a short composition) every week. (This is separate from any grammar exercises your class tutor may ask you to submit). This means that 5 pieces of written work are submitted in MT, and 8 pieces of work are submitted in HT.

Weeks 1-3 of MT are to be regarded as ‘practice sessions’ where standardised marking procedures are in place as follows: after ten ‘careless’ errors (henceforth known as SAGAs!) a student’s work will be returned to him / her to be rewritten and resubmitted; SAGAs are errors in the four areas of:

- Spelling
- Accent
- Gender and
- Adjective agreement.

From Week 4 onwards, the assessment programme proper begins; submitted work, even if full of SAGAs will be marked accordingly.

Term averages will be calculated as follows:

- MT Weeks 1-3: 3 pieces of work submitted – none count. These are the ‘practice sessions’.
- MT Weeks 4-12: 8 pieces of work submitted – the best five count
- HT Weeks 1-12: 11 pieces of work submitted – the best eight count

Please note there are no ‘practice sessions’ in HT.

An overall average for the year is then calculated which counts for 10% of the overall mark in the Annual Examinations. If, for example, in MT, students only submit 5 pieces of work between weeks 4 and 12, then all of these will count. If only 3 out of the 5 required are submitted, the total will still be divided by 5. It is in students’ interest then to submit as many of the weekly assessments each term as possible.

Late submission: Unless there is a medical reason for late submission, the following penalties will apply:

- 5% will be deducted from work which is submitted up to a week after the deadline set by the class tutor.
- Work submitted over a week late will not be accepted.

Supplemental This continual assessment mark will only count for the Supplemental Examinations if it benefits the student; i.e if the inclusion of the assessment mark produces a higher overall mark it will be included; if it produces a lower mark overall it will be discounted, and the language examination (two written papers, oral and aural) alone will count.

4.5.5.2 Self-Access Component

Centre for Language and Communication Studies

The Centre for Language and Communication Studies (CLCS), in addition to its role as an academic department occupied with teaching and research in general and theoretical linguistics, is responsible for the provision of language-learning facilities for the College as a whole. These include the language laboratories and computer laboratory, which students of French should use, particularly for Self-Access
work. All students should spend a minimum of one hour a week working on aspects of grammar which have been covered in the week’s lecture.

The general office is in room 4091, which is where you should go to borrow books for your Self-Access grammar sessions. You should then take the material into the laboratory and computer room (4074). The office and laboratory are open from 9 to 5 daily (including lunch-time).

The Centre includes a variety of self-tuition materials (books, audio tapes, videos, CD-ROMs) and a number of feature films in French, which you can use on a self-help basis in rooms 4073 and 4074. Room 4074 houses a bank of television monitors receiving a variety of foreign stations by satellite, including France 2. You are free to watch this at any time. Note particularly the news bulletin at 13h00 French time. The neighbouring room, 4073, provides you with language resources on computer, including Internet access to many sites in France.

We encourage you to use these resources as often as possible.

4.5.6 SF CSLF Language Programme

**FRU22001 & FRU22002 Oral and Written French**  
ECTS 10; 3 hours; Semester 1 and Semester 2

Aim: Mastery of Oral and Written Language Skills. There is a weekly grammar lecture, a weekly class devoted to reading and writing skills, and a weekly class devoted to aural comprehension and oral expression.

Content: On successful completion of a students will be able to:

- Communicate clearly and effectively, both orally and in writing, in English and French in academic, professional and social settings
- Organise and present ideas in English and French, in writing and orally, within the framework of a structured and reasoned critical argument
- Translate a range of journalistic texts to and from French, with accuracy, consistency and appropriateness of register and expression
- Demonstrate a good comprehension of French by writing in French a résumé of a journalistic text
- Demonstrate a high level of proficiency in the French language in both written and spoken contexts
- Analyse critically and independently, in English and French, a variety of texts written in French in a variety of registers

Assessment:

- Assessment 1: 1 x 1.5-hour Translation exam in MT assessment week (25%)
- Assessment 2: 1 x 1.5-hour Composition exam in HT assessment week (25%)
- Assessment 3: 1 x Oral examination in HT revision week (20%)
- Assessment 4: 6 x continuous assessment assignments, 3 in MT and 3 in HT (20%)
- Assessment 5: 8 x grammar quizzes, 4 in MT and 4 in HT (10%)

**FRU22072 French Language for Computer Science**  
ECTS 5; 2 hour; S2

Aim: The overall aim of this module is to prepare SF Computer Science and Language (French)(CSL) students for an effective Erasmus exchange by equipping them with language skills focused on their specialised and technical needs. The weekly format of the module is two tutorials.

Content: This will include
• Development of ability to understand relevant mathematical, linguistic and computer science texts in French.
• Development ability to read and extract salient information from long texts in the target language.
• Demonstration of ability to take notes from source materials and from activities.
• Understand the purpose of the résumé, the rapport and the synthèse de documents.

Assessment: The assessment will be in part based on continuous assessment activities in French in relation to the texts studied, and in part in the production in French of a short but accurate report using a standard scientific layout: theoretical framework, objective, method, results, and conclusion.

4.5.7 JS CSLF

Students spend their JS year abroad under an approved Erasmus programme. The French-speaking universities with which contacts are currently available are Grenoble, Lyon, Paris, Rennes, Toulouse, Nice and Louvain.

4.5.8 SS CSLF Language Programme

FRU44051 & FRU44052 Oral and Essay skills for CSL 10 ECTS;

Aim: To develop aural comprehension and oral expression in French to a high level of proficiency. To bring students to a high level of proficiency in written French, focusing on accurate linguistic expression and developing an argument and a coherent structure.

Content: On successful completion of this module, students will be able to: express themselves fluently and correctly in spoken French, on an intellectually challenging topic, coherently and with only brief notes, and also to express themselves fluently and correctly in written French in a structured way, at a level of discourse appropriate to an academic setting and dealing with intellectually challenging topic.

Assessment: there will be a 15 minutes Oral examination, presenting the dissertation and a 2 hour Essay examination

FRU44062 Translations Skills for CSL 5 ECTS; S2

Assessment: Translation into English class test (2 hours)

Optional modules In addition to the above, optional further modules can be taken. The options offered can vary from year to year. A recently offered option was

• FR4043 Language and society in the French-speaking world: status, diversity and function. 10 ECTS;
Chapter 5

CSL Projects

5.1 Third Year Projects

One feature of the CSL degree that is distinct from the other computer science degrees offered by Trinity is that it requires a 3rd year project in an area of individual interest to the student, combining focus on the language the student is engaged in with linguistic theory. This is in addition to a final year project. Third year projects are agreed individually and are essentially papers about some aspect of linguistic theory learned during the first years of the degree applied specifically to the language being studied. Projects may also draw on ongoing research or linguistic coursework in the host institution. Papers are about 30 pages long, plus bibliography. It is advised to use a style guide like the *Publication Manual of the American Psychological Association*.

5.2 Fourth Year Projects

Final year projects are more substantial exercises and may be in any area of computer science, linguistics or language study which interests the student and for which the student can locate a supportive supervisor. You can find on the CSL website a list of recent projects in various aspects of computational linguistics. You will notice that some projects involve more linguistics than computing, and that others involve nearly all computing. The list is not complete in that it does not include the projects from earlier years of the degree. Topics on offer for projects in computer science and statistics are also available on the web.

- Past projects:
  

- Current projects in computational linguistics, computer science and statistics:
  
  https://www.scss.tcd.ie/StudentProjects/index.php

5.3 Research Ethics

Any research project that involves human participation conducted through this course (for example, a questionnaire or survey, or system user-evaluation, etc.) must have independent review by a *Research Ethics Committee* before its commencement.

Individual applications are considered on their own merits. A basic principle is that prospective participants should be fully informed about the research and its implications for them as participants, with
time to reflect on the possibility for participation prior to being asked to sign an informed consent form. Informing prospective participants fully includes declaring potential conflicts of interest that the researcher may have in conducting the research, detailing how participants may withdraw data associated with their participation from further analysis within the study, explaining the preservation of their anonymity within the study, warning them about potential consequences of discovery during the study of issues that would necessarily have precedence over assurances of anonymity, and so on.

The online system, with further information and guidelines, can be found here: http://www.scss.tcd.ie/undergraduate/ethics/

It takes time to prepare an application for research ethics approval, to have the application considered, and to respond to feedback on the application where issues are raised. You should plan in your work for the time it takes to obtain research ethics approval.

Retrospective approval will not be granted.

Please also note, research conducted in the School of Computer Science and Statistics should be undertaken with cognisance of the TCD Guidelines for Good Research Practice; see http://www.tcd.ie/about/policies/assets/pdf/TCDGoodResearchPractice.pdf.
Chapter 6

CSL Progress Regulations

Passing a module  A given module may have several different kinds of assessment component, with there often being a coursework component and an examination component. The size of these components and their role in determining the passing of a module varies from module to module. For this reason it is imperative that you check for these module details via my.tcd.ie.

To progress at the initial examinations  ‘Progression’ is the Trinity term for meeting the academic requirements to move from one year into the next and the initial examinations are those scheduled in the 14th weeks of Semesters 1&2. The CSL regulations follow a scheme widely used in college. There are requirements concerning an average mark over modules taken (1 below), and requirements pertaining to the passing of individual modules (2 below).

1. students must achieve an overall credit-weighted average mark of at least 40 per cent.

2. additionally each module must be either passed outright (that is a mark of at least 40%), or deemed ‘passed by compensation’. This a mechanism that allows a relatively small number of modules to be declared passed, though less than 40% was achieved.

   In particular,

   (a) modules totalling up to a maximum of 10 credits can be deemed to have been passed by compensation if in those modules a mark of at least 35% is achieved.

   (b) If more than 10 credits worth of modules have not been passed outright, then no modules can be deemed passed by compensation

By its design, this ‘passing by compensation’ option, with its credit maximum (10), and marks minimum (35), is not likely to be relevant to many students. In particular not reaching 40% in more than a tiny number of modules will imply supplementals, even if via good or even sensational marks in other modules gives a credit-weighted average of more than 40%.

To progress at Supplemental examinations  If a student fails to meet the Progression criteria at the initial examinations examinations, then concerning all modules\(^1\) which were not passed (ie. the marks was < 40%) there is a process of supplemental assessment/examination.

These take place in August with progression at the supplementals being settled before the commencement of the next teaching period.

\(^1\) It should be noted that all failed modules/components will be reassessed; it is not the case that some are reassessed while some are deemed passed by compensation.
Different modules stipulate different arrangements concerning potential re-assessment of its components, and it may involve only an examination, or it may involve supplementary course-work, or a mixture of both. Generally an assessment component on which a pass mark was achieved will not be re-assessed. Should you fail a module at the Summer examination you should check with the lecturer involved as to the nature of the supplemental assessment. Details should also be available through my.tcd.ie

After any such supplemental re-assessment of failed modules has taken place, the same progress criteria are applied as were applied after the initial examinations to determine if all modules are now passed, including by compensation.

**Failure to progress** If after the initial and supplemental exams, the Progression criteria still have not been fulfilled, the student cannot progress into the the subsequent year: for a module that was not passed there are no provisions for ‘carrying’ that subject into the next year. The student may then avail of general College regulations (given in the Calendar) concerning repeating a year or ‘going off books’.

**A note for returning students** The regulatory framework has shifted somewhat for the academic year 18-19. There are supplementals now in final year. All modules without exception are ‘compensatable’. All modules compensated must have a mark of 35% or more, whereas previously if only one 5 credit module was compensated the mark was required only to be 30% or more.

**The College Calendar** While the information given above about regulations strives to be as comprehensive and accurate as possible, should the College Calendar states a provision at variance with what is described in this Handbook, it is the provisions stated in the Calendar that take precedence.
Chapter 7

For 19-20 entrants: some forthcoming SF,JS,SS changes

The details given in the preceding pages describe the modules being taken by students currently in either their JF, SF, JS or SS years. For those in JF this year, there will be some differences in the SF/JS/SS continuation, though not very substantial. These differences are indicated below.

7.1 Senior Freshman

There are no differences

7.2 Junior Sophister

The normal practice will remain that students spend their JS year abroad. For those that do not, the plan given below differs only from that in section 3.3 in terms of what is made mandatory and what is made optional.

In CS ≥ 25 ECTS-worth of modules will be taken, 15 of which will be the following mandatory modules:

- CSU34011 Symbolic Programming (5 ECTS)
- CSU33061 Artificial Intelligence I (5 ECTS)
- CSU33012 Software Engineering (5 ECTS)

Then a further 10 ECTS will be chosen from a range of options, including

- CSU33071 Compiler Design I (5 ECTS)
- STU22004 Applied Probability 1 (5 ECTS)
- CSU33013 Software Engineering Group Project (5 ECTS)
- CSU34016 Introduction to Functional Programming (5 ECTS)
- CSU33081 Computational Mathematics (5 ECTS)
- CSU34041 Information Management II (5 ECTS)

In Linguistics ≥ 15 ECTS-worth of modules will be taken, from the following options:

- LI2307 Aspects of Written Language (5 ECTS)
- LI2303 Language Learning (5 ECTS)
- LI2301 Aspects of vocabulary (5 ECTS)
- LI2304 Sociolinguistics (5 ECTS)

In the chosen language ≥ 15 ECTS-worth of modules will be taken, chosen from all available modules.
7.3 Senior Sophister

Relative to what was indicated in section 3.4, there will be some differences concerning (i) what is mandatory and optional and (ii) new arrangements concerning what is currently designated the ‘Final Year Project’, but will then be designated the ‘Capstone Project’.

In CS ≥ 10 ECTS-worth of modules will be taken, but no particular modules are designated as mandatory. These modules will be drawn from the combined pool of those CS modules designated as mandatory and optional in section 3.4.

In Linguistics also ≥ 10 ECTS-worth of modules will be taken; in this case 2 particular modules will be mandatory:

- LI4031 Speech Analysis and Synthesis (5 ECTS)
- LI4032 Computational Linguistics (5 ECTS)

In the chosen language likewise ≥ 10 ECTS-worth of modules will be taken; particular modules are mandatory:

- IR4021 (Ranganna teagaisc, 10 ECTS)
- GR4001 (German Language 4, 10 ECTS)
- FR4061 (Oral and Essay skills for CSL, 10 ECTS)

The ‘Capstone Project’ is a re-naming of the FYP but will be worth 20 ECTS. Its remit concerning possible subject areas will remain the same: a project may be pursued in any of the main strands of the degree, and absolutely may combine strands.

This leaves 10 further ECTS as option modules. In addition to the modules which were indicated in section 3.4 as options, particular language modules will become options:

- IR4013 (Gàidhlig, 5 ECTS)
- GR4010 (German Translation, 5 ECTS)
- FR4059 (Translation skills for CSL, 5 ECTS)
Chapter 8

College-wide Regulations and Policies

Beside being summarised or excerpted below, College regulations are set out in the University Calendar, which may be consulted in any College Library, the Enquiries Office, any academic or administrative office or online at http://www.tcd.ie/calendar/.

The three most relevant extracts of the Calendar are entitled General Regulations and Information (in Part A), and the two sets of General Faculty Regulations, one appearing in the Faculty of Arts, Humanities and Social Sciences section and one in the Faculty of Engineering, Mathematics and Science section. These are handed out at registration at the beginning of the year and you are expected to be aware of the various regulations. Ignorance of the regulations is not a valid reason for failure to comply.

8.1 External Examiner

Along with all other Trinity degree programmes, there is a so-called External Examiner for the CSL programme, who in a variety of ways is responsible for providing external oversight of the degree programme. The current External Examiner is Prof. Dr. Thomas Ede Zimmermann, who is Professor of Germanic Linguistics and Formal Semantics at the Institut für Linguistik at Johann Wolfgang Goethe-Universität, Frankfurt am Main.

8.2 Priority of College Calendar

Please note that College regulations as stated in the Calendar prevail over any stipulated by this handbook, should there be a divergence.

http://www.tcd.ie/calendar/

8.3 Individual Work and Plagiarism

It is important to highlight that all work submitted must be your own, and not taken directly from the internet or other sources. The College takes plagiarism seriously. The College regulations governing plagiarism are available in the college calendar and are copied in Appendix A (see also the College plagiarism policy at http://www.tcd.ie/teaching-learning/assets/pdf/PlagPolicy02-06-2016.pdf). You are expected to be familiar with these rules and to understand what is considered plagiarism.
Before beginning your first assignment, you must complete the online tutorial on avoiding plagiarism ‘Ready, Steady, Write’, located at

http://tcd-ie.libguides.com/plagiarism/ready-steady-write

Please note that participating departments may use software tools such as TurnItIn to identify plagiarism. You are also encouraged to use the College Library’s repository of resources on plagiarism and its avoidance at

http://tcd-ie.libguides.com/plagiarism

In the case of group work, groups should establish some mechanism to ensure that no member engages in plagiarism. Do not sign the Group Assignment Declaration if you have not assured yourself that the whole assignment is original.

Please note in addition to all of the above that many assignments will need to be submitted online, in digital form, and that software can and often will be used which is extremely good at detecting plagiarism in digital submissions, including its comparison with the entirety of what is available via the Internet.

8.4 Laptop use in lectures

Note that the use of laptops (and other devices) is at the lecturer’s discretion in lectures, laboratory and tutorial sessions.

8.5 Absence from Examinations

Students must attend all examinations. An unexplained absence from any examination and/or not making a serious attempt at an examination results in an automatic exclusion from the degree programme.

8.6 Trinity Exam Grade Scheme

Examination results are posted using the grading scheme.

I - 70% or over First class honor

II.1 - 60% - 69% Second class honor - first division

II.2 - 50% - 59% Second class honor - second division

III - 40% - 49% Third class honor

F1 - 30% - 39% Fail

F2 - 29% or less Fail
8.7 ECTS: the European Credit Transfer System

ECTS was briefly introduced in section 2.8 and has been mentioned throughout this handbook. The following is a fuller exposition, in particular explaining what the system intends to quantify.

The European Credit Transfer and Accumulation System (ECTS) is an academic credit system based on the estimated student workload required to achieve the objectives of a module or programme of study. It is designed to enable academic recognition for periods of study, to facilitate student mobility and credit accumulation and transfer. The ECTS is the recommended credit system for higher education in Ireland and across the European Higher Education Area.

The ECTS weighting for a module is a measure of the student input or workload required for that module, based on factors such as the number of contact hours, the number and length of written or verbally presented assessment exercises, class preparation and private study time, laboratory classes, examinations, clinical attendance, professional training placements, and so on as appropriate. There is no intrinsic relationship between the credit volume of a module and its level of difficulty.

The European norm for full-time study over one academic year is 60 credits. 1 credit represents 20-25 hours estimated student input, so a 10-credit module will be designed to require 200-250 hours of student input including class contact time, assessments and examinations.

ECTS credits are awarded to a student only upon successful completion of the course year. Progression from one year to the next is determined by the course regulations. Students who fail a year of their course will not obtain credit for that year even if they have passed certain component courses. Exceptions to this rule are one-year and part-year visiting students, who are awarded credit for individual modules successfully completed.

8.8 Data Protection

Trinity College Dublin uses personal data relating to students for a variety of purposes. Trinity is careful to comply with our obligations under data protection laws and there is a short guide (available at https://www.tcd.ie/info_compliance/data-protection/student-data/) to explain how the College obtains, uses and discloses student data in the course of performing its functions and services.

8.9 Other Policies

Some links to specific policies are given below.

- Policy and Procedures for dealing with complaints of Harassment including Sexual Harassment and Racial Harassment
  http://www.tcd.ie/about/policies/respect.php
- College Alcohol Policy
  http://www.tcd.ie/about/policies/alcohol.php
- Safety Issues
- Code of Conduct for Computing Facilities
  http://www.tcd.ie/about/policies/it_and_network_code_of_conduct.php
- Emergency Procedures
- Other College Policies
  http://www.tcd.ie/about/policies/
A great many other items of interest are available on the Departmental and College web pages.
Chapter 9

General Information

9.1 Co-curricular activities

Trinity College has a significant number of diverse student societies which are governed by the Central Societies Committee. They provide information on the societies including how to get involved and even how to start your own society! See http://trinitysocieties.ie/ for more details. Students are encouraged to get involved.

Trinity College also has a huge range of sports clubs which are governed by the Dublin University Athletic Club (DUCAC). See http://www.tcd.ie/Sport/student-sport/ducac/?nodeId=94&title=Sports_Clubs for more details.

9.2 Student organisations

The Trinity College Students’ Union (TCDSU) is run for students by students. TCDSU represent students at college level, fight for students’ rights, look after students’ needs, and are here for students to have a shoulder to cry on or as a friend to chat with over a cup of tea. Students of Trinity College are automatically members of TCDSU. It has information on accommodation, jobs, campaigns, as well as information pertaining to education and welfare. For more information see https://www.tcdsu.org/.

The Trinity Graduate Students’ Union (TCD GSU) is the main representative body for postgraduate students in Trinity College. For more information see https://www.tcdgsu.ie/.

9.3 Emergency Procedure

In the event of an emergency, dial Security Services on extension 1999 (+353-1-8961999 from a mobile phone or an external landline). Security Services provide a 24-hour service to the college community, 365 days a year. They are the liaison to the Fire, Garda and Ambulance services and all staff and students are advised to always telephone extension 1999 (+353 1 896 1999) in case of an emergency. Should you require any emergency or rescue services on campus, you must contact Security Services. This includes chemical spills, personal injury or first aid assistance. It is recommended that all students save at least one emergency contact in their phone under ICE (In Case of Emergency).
Chapter 10

An extract from College Calendar concerning plagiarism

82 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.

83 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 inprinted, 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.

84 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.

85 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.

86 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 on http://tcd-ie.libguides.com/plagiarism.

87 If plagiarism as referred to in §82 above is suspected, in the first instance, the Director of Teaching and Learning (Undergraduate), or their designate, will write to the student, and the student’s tutor advising them of the concerns raised. The student and tutor (as an alternative to the tutor, students may nominate a representative from the Students’ Union) will be invited to attend an informal meeting with the Director of Teaching and Learning (Undergraduate), or their designate, and the lecturer concerned, in order to put their suspicions to the student and give the student the opportunity to respond. The student will be requested to respond in writing stating his/her agreement to attend such a meeting and confirming on which of the suggested dates and times it will be possible for them to attend. If the student does not in this manner agree to attend such a meeting, the Director of Teaching and Learning (Undergraduate), or designate, may refer the case directly to the Junior Dean, who will interview the student and may implement the procedures as referred to under CONDUCT AND COLLEGE REGULATIONS §2.

88 If the Director of Teaching and Learning (Undergraduate), or designate, 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 attending the informal meeting as noted in §87 above must state their agreement in writing to the Director of Teaching and Learning (Undergraduate), or designate. If the facts of the case are in dispute, or if the Director of Teaching and Learning (Undergraduate), or designate, 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 as referred to under CONDUCT AND COLLEGE REGULATIONS §2.

89 If the offence can be dealt with under the summary procedure, the Director of Teaching and Learning
(Undergraduate), or designate, 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.

90 Provided that the appropriate procedure has been followed and all parties in §87 above are in agreement with the proposed penalty, the Director of Teaching and Learning (Undergraduate) 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 Senior Lecturer must be notified and requested to approve the recommended penalty. The Senior Lecturer will inform the Junior Dean accordingly. The Junior Dean may nevertheless implement the procedures as referred to under CONDUCT AND COLLEGE REGULATIONS §2.

91 If the case cannot normally be dealt with under the 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.
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