



POST-GRADUATE APPLICATION PROCESS AND STUDY INFORMATION

A. ONLINE APPLICATION

Visit the UFS website and follow the applications link (<https://apply.ufs.ac.za/>) to complete and submit your application form. Please ensure that you upload all the required supporting documents as requested. Terms and Conditions apply.

If you do not find the degree online for which you would like to apply, a hardcopy version of the application form can be requested from Dr de Wet (DWetL@ufs.ac.za). Fill it in and send it, together with **all the supporting documentation**, including your proof of payment of the application fee, to the address / email address below:

The Registrar: Applications

PO Box 339 | Bloemfontein | 9300 | Republic of South Africa

All enquiries regarding applications:

Tel: +27(0) 51 401 9666

Email: studentadmin@ufs.ac.za

As soon as you have applied, please send an email to this regard to Dr de Wet at DWetL@ufs.ac.za to allow her to follow up on your application.

B. INTERNATIONAL APPLICATIONS

- Applicants, who are in possession of a degree from non-South African universities, **must include the South African Qualifications Authority (SAQA) evaluation** letter with their application form.
- Non-South African certificates/degrees must be assessed by SAQA prior to applying to the UFS. This process can take anything from 2 – 3 months. Please visit www.saqa.org.za for more information.
- The application process must be completed before you arrive for registration at the University. Your details must be captured on the UFS computerised database to facilitate the registration process. For this reason, adhering to closing dates is extremely important.
- Students transferring from other universities must include a certificate of conduct as well as a study record from their previous university with their applications. The application closing date for students transferring from other universities is 30 September.



- International postgraduate students must attach certified copies of degrees/certificates to their applications. Degrees/certificates that are not certified will delay the processing of applications.
- Ensure that your application form is completed correctly and signed before submitting it. You should expect to receive feedback from the University within 3 weeks of sending your application. **However, as soon as you have applied, please send an email to this regard to Dr de Wet at DWetL@ufs.ac.za to allow her to follow up on your application.**
- All enquiries regarding applications: Tel: +27(0)51 401 3597.

If your application is successful, you will receive a letter of admission from the admissions office, as well as a letter from the Office for International Affairs for the study permit. Visit the South African Embassy in your home country with the above letters, as well as your passport to apply for your permit. Please be advised that your study permit application can take up to six weeks to be finalised.

All international students must provide proof of membership to a medical-aid, registered with the South African Medical Council. Hospital plans and travel insurance will not be accepted as medical-aid.

Visit <http://www.medicalschemes.com/MedicalSchemes.aspx> for more information on registered medical aids.

International students may also contact the Office for International Affairs for further assistance:

For application, visa, and immigration enquiries, contact:

Jeanne Niemann: +27 51 401 3219 niemannaja@ufs.ac.za

For institutional reporting and office projects, contact:

Chevon Jacobs: +27 51 401 2501 JacobsCS@ufs.ac.za

For scholarships and funding, contact:

Mbali Moiketsi: +27 51 401 3403 MoiketsiMV@ufs.ac.za

For international student activities, contact:

Bulelwa Moikwatlhai: +27 51 401 3397 MaloB@ufs.ac.za

For partnership and exchange enquiries, contact:

Zenzele Mdletshe: +27 51 401 9027 MdletsheZP@ufs.ac.za

The International Office is situated in the Mabaleng Building on the Bloemfontein campus. Email: internationalenquiries@ufs.ac.za.



C. FEES 2020

For any financial queries, please contact:

Tuition fees

Tel: +27 51 401 3003 or Email: tuitionfees@ufs.ac.za.

For an online quotation, you can also visit:

<https://kovsielife.ufs.ac.za/quote/quote.aspx>.

The Department of Computer Science and Informatics does not handle queries regarding tuition fees.

D. GUIDELINES FOR ACCEPTING POST-GRADUATE STUDENTS

1. Post-graduate applicants who apply for a research Masters or PhD, have to slot into the existing research areas within the Department of Computer Science & Informatics, namely:
 - Human-Computer Interaction (HCI),
 - Computer Science Education (CSE),
 - Eye-tracking,
 - Wireless Communication Systems/Artificial intelligence,
 - Blockchain Technologies, and
 - Data Science/Natural Language Processing (NLP).
2. If the original topic/proposal does not have any links with the Department's research areas from the offset, the applicant cannot be accommodated. If the applicant's topic/study proposal, however, closely relates to one of the Department's research areas, the applicant should attempt to adapt it so that it fits in totally.
3. If the applicant is not willing to change his/her topic/proposal, the Department will not be able to accommodate the applicant.



E. GUIDELINES FOR MASTER'S & Ph.D. STUDENTS

1. Applicants (including applicants who did not complete their previous degree at the UFS) must apply by filling in the application form that can be obtained from the UFS website (<https://apply.ufs.ac.za>). As mentioned above, if you do not find the degree online for which you would like to apply, a hardcopy version of the application form can be requested from Dr de Wet (DWetL@ufs.ac.za).
2. All relevant documents related to the applicant's previous qualifications must (as specified in the UFS application form) be uploaded to accompany the application when it reaches the UFS Administration. This includes a SAQA evaluation certificate for non-RSA previous qualifications (it is the applicant's own responsibility to request this certification beforehand). As soon as the application is complete, Administration will send it through to the Department of Computer Science & Informatics for academic consideration.
3. If the choice of the prospective departmental research area it is not clear from the applicant's documentation, the Department may contact the applicant in order to clarify.
4. If the application was unsuccessful, the Department will communicate the reasons and specify what will be expected of the applicant to be successful when re-submitting an application in future (if applicable).
5. If the applicant's:
 - a. Application form is complete and correctly filled in;
 - b. The NQF (SAQA) level of the previous degree is correct;
 - c. In the case of a module-oriented previous qualification, the study records indicate previous modules on the correct NQF-level with the majority of modules within Computer Science; and
 - d. If the minimum average of 60% has been met,the applicant will be *conditionally* accepted.
6. The applicant will be referred to a relevant research area coordinator who will evaluate the proposed research idea/topic. Based on the relevancy/potential of the proposed idea and the Department's supervision capacity, a decision will be made as to whether the applicant will be allowed to register.
7. As soon as the student is registered, an official supervisor/promotor will be allocated based on the research area and topic. It is the responsibility of the applicant, in collaboration with the allocated supervisor/promotor, to prepare a research proposal.



8. The final proposal must be presented *within 3 months of registration*.
9. After physically presenting the research proposal to the staff during a research talk in the Department of Computer Science & Informatics, the Department will make a final decision on whether the student will be allowed to continue with his/her studies, or whether the registration of the student will be terminated.
10. If the student fails to adhere to the 3 month time restriction, Administration will be notified to terminate the registration.



F. HONOURS 2020

1. COMPULSORY SESSIONS FOR ALL PROSPECTIVE HONOURS STUDENTS

- **Information session**

A compulsory information session will be held during the week before classes start in February 2020. Details will be provided as soon as the UFS Calendar for 2020 has been announced.

- All relevant information about the degree will be provided during this session to assist the students with their module choices and registration. Each lecturer will present a brief overview of his/her module.
- DO NOT MISS THIS SESSION!!!

- **Honours orientation workshops**

Orientation workshops for our Honours students will be held in the days following the Information Session, in the week before the classes commence. The details of these workshops will be provided later in the year.

- Please make arrangements with your employer well in time to attend.
- A light lunch will be provided during each of the workshop days.
- These sessions are ***compulsory*** for all new Honours students. If you intend to do your Honours project in 2020 and have already attended 2019's workshops, you are still strongly advised to attend these workshops to assist you with your project.

2. DEGREE CODES

- BSc Honours (Computer Science and Informatics) = BC460022
- BSc Honours (Data Science) = BC460095
- BCIS Honours = BC460156



3. ADMISSION REQUIREMENTS

- BSc IT degree:
 - Minimum of 60% average for the four UFS (or closely related) 3rd year IT-modules
(UFS: Database Design, Internet Programming, Networks, Software Engineering).
- BSc IT (Data Science) degree:
 - Minimum of 60% average for the five UFS (or closely related) 3rd year IT-modules
(UFS: Database Design, Internet Programming, Networks, Software Engineering and Data Science)
- BCIS (Bachelor of Computer Information Systems) degree:
 - Minimum of 60% average for at least six Business Management-related modules. Must have passed Business Management modules up to NQF-level 7
 - Minimum of 60% average for the four UFS (or closely related) 3rd year BCIS and IT-modules
(UFS: Database Design, Information Systems in Organisations, Networks and Software Engineering)

4. DURATION OF STUDIES

- 7 modules plus project year module = Honours Degree
- Choice of 1 year (full time) or 2 years (part-time)

One year:

- 4 modules 1st semester & 3 modules 2nd semester & Project module
 - OR
- 3 modules 1st semester & 4 modules 2nd semester & Project module

Two years

- Spread the 7 modules over 2 years. Project must be completed in 1 year.



5. MODULES

- BSc Honours (Computer Science and Informatics) degree:
 - Compulsory:
 - CSIS6809: Honours Project (36 credit year module)
 - CSIS6813: Introduction to Research.
 - Electives
 - See modules on page 9.

- BSc Honours (Data Science) degree:
 - Compulsory
 - CSIS6809: Honours Data Science Project (36 credit year module)
 - CSIS6813: Introduction to Research
 - CSID6853: Data Warehousing
 - CSID6873: Data Science (Available from 2021)
 - CSID6823: Business Intelligence
 - CSIC6863: SAS Programming AND/OR STSD6823: Big Data
 - Electives
 - One/two of the remaining modules.

- BCIS Honours degree:
 - Compulsory
 - BCIS6809: Honours CIS Project (36 credit year module)
 - CSIS6813: Introduction to Research
 - CSIE6863: IT Project Management
 - EVEN6814: Venture Creation
 - ECOM6824: Contemporary Digital Marketing
 - Electives
 - CSII6833: Human-Computer Interaction
 - CSII6813: Information Security
 - CSII6883: Digital Forensic Science
 - CSID6853: Data Warehousing
 - CSID6823: Business Intelligence
 - CSIC6863: SAS Programming
 - CSID6843: Advanced Databases



6. HONOURS MODULES 2020

For BSc Honours, a maximum of 2 **approved** related Honours modules may be taken from other departments within the Faculty of Natural and Agricultural Sciences.

It is, however, the student's own responsibility to make sure that these modules fit into our department's timetable. No changes to the timetable will be made from our side to accommodate other departments' modules.

1st Semester 2020

MODULE	DESCRIPTION	LECTURER
CSII6833	Human-Computer Interaction	Dr Lizette de Wet
CSII6813	Information Security	Dr Wynand Nel
CSID6853	Data Warehousing	Dr Eduan Kotzé
CSIP6853	Advanced Programming I (Mobile)	Dr Andries Burger
CSIS6813	Introduction to Research	Prof Pieter Blignaut
CSIP6833	Advanced Web Development	Prof Liezel Nel

2nd Semester 2020

MODULE	DESCRIPTION	LECTURER
CSID6823	Business Intelligence	Dr Eduan Kotzé
CSID6843	Advanced Databases	Prof Tanya Stott
CSII6883	Forensics	Dr Wynand Nel
CSIC6863	SAS Programming (Capita Selecta)	Mr Leon Grobbelaar (CUT)
CSIE6863	Project Management	Mr Jaco Pieterse
CSIN6843	Advanced Networks	Prof Paul Kogeda



7. CLASS TIMES – 1ST SEMESTER 2020

Will still be finalised.

8. TEXTBOOKS 1ST SEMESTER 2020

Will still be finalised.

9. CONTACT SESSIONS

Contact sessions are compulsory and generally take place weekdays between 17:10 and 19:00. In some cases it might continue until 21:00. Depending on the modules presented, a module could also be presented between 07:00 and 08:00 in the mornings.

In 2020 the Data Warehousing module will be presented on Tuesday afternoons from 14:30 – 16:30. If that is not possible for you, arrange your modules in such a way that you enrol for Data Warehousing in 2021, when it will switch time slots with Information Security and will again be presented at 17:10. This arrangement, however, is still subject to change.

Your lecturers will specify the venue for each module.

10. COMMUNICATION

Email: DWetL@ufs.ac.za

Blackboard: for CSIS6809

Facebook: UFS CSI Post-grad

Twitter: <http://twitter.com/ufscsi> @UFSCSI (UFS CSI Post-grad)



11. APPLYING FOR HONOURS

- Current UFS students:
 - DV3 form to be signed by Dr de Wet *or* online application via UFS website (closing date 30 November)
 - Conditional acceptance, depending on final results:
 - 60% average:
 - ✚ across all 4 final year IT modules for BSc Honours (Computer Science & Informatics), *or*
 - ✚ across all 5 final year modules for BSc Honours (Data Science), *or*
 - ✚ across all 4 final year BCIS and IT-modules for BCIS Honours.
 - Degree must have been obtained.
- New applicants:
 - Online application via UFS website (closing date 30 November).

12. REGISTRATION IN 2020

Registration can be finalised during the week after the Honours information session in February 2020.



G. MASTERS – 2020

1. **ADMISSION REQUIREMENTS**

- B.Sc. Hons or B.Com. Hons Degree (with IT or Data Science as major) on SAQA level 8.
- Minimum 60% average for the Honours degree.

2. **DURATION FOR RESEARCH MEASTERS**

- Full time: Minimum 1 year & maximum 3 years
- Part time: Minimum 2 year & maximum 4 years

3. **CHOICE BETWEEN RESEARCH AND STRUCTURED MASTERS**

3.1 **Research Master's degree**

Programme codes: BC480022 (Computer Science & Informatics)

BC480056 (Computer Information Systems)

Module code: CSIS8900

- ❖ Dissertation (180 credits)
- ❖ Topic must fit into at least one of the Department's research areas:
 - ✚ Human-Computer Interaction (HCI)
 - ✚ Data Science/Natural Language Processing (NLP)
 - ✚ Computer Science Education (CSE)
 - ✚ Eye-tracking
 - ✚ Wireless Communication Systems/Artificial intelligence
 - ✚ Blockchain Technologies.
- ❖ Prepare a detailed proposal (short literature review, problem statement, research question(s) & goals, hypotheses and indication of research design & methodology). The proposal must be presented in person / Skype within 3 months of registration. Failure to do so would result in the revoking of the registration.

❖ *Final acceptance of student is subject to acceptance of proposal.*



3.2 Structured Master's degree

Due date for applications: 30 September.

Programme code: BC470122 (Computer Science & Informatics)

❖ **Extended research essay (120 credits)**

Module codes: CSIS7910 (1st semester), or
CSIS7920 (2nd semester)

❖ **Plus 3 research modules (Choose 3 modules from the following FOUR research areas):**

✚ **Human-Computer Interaction** (Presented by Dr De Wet)

Module codes: CSIS7915 (1st semester), or
CSIS7925 (2nd semester)

(The focus of HCI research is Usability and User Experience (UX) evaluation. Different evaluation methods may be applied, with emphasis on physiological testing involving brain-computer interfaces).

✚ **Data Science/Natural Language Processing** (Presented by Dr Kotzé)

Module codes: CSIS7935 (1st semester), or
CSIS7945 (2nd semester)

(The research area focuses on algorithms and methods to process big data sets with a data science approach. These datasets are predominately in unstructured natural language text formats (tweets, emails, blogs, reviews, text files etc.). Methods and algorithms include natural language processing (NLP) techniques, text classification algorithms, sentiment analysis, topic modelling, feature extraction, word embeddings (word2vec, doc2vec), machine learning, and deep learning).

✚ **Computer Science Education (CSE)** (Presented by Prof Nel)

Module codes: CSIS7955 (1st semester), or
CSIS7965 (2nd semester)

(The aim of the Computer Science Education (CSE) research area is to promote research and scholarship both in the field of Computer Science Education and the application of Computer Science to improve teaching and learning. CSE research typically focuses on finding more effective approaches to teach Computer Science to a larger and more diverse audience, or the development of software that can impact upon the teaching and learning environment).

✚ **Eye-tracking** (Presented by Prof Stott)

Module codes: CSIS7975 (1st semester), or
CSIS7985 (2nd semester)



- ❖ Except for CSIS7955/CSIS7965, there will be no formal classes and no examination. You will choose a topic and then you must summarize from the literature all the work that has been done on the topic and identify a research project in terms of a problem statement.
- ❖ Deliverable: A document consisting of an introduction, a literature review, a problem statement and a conclusion. You will be evaluated on this document, internally and externally.
- ❖ After passing the 3 modules:
 - You select one of your three research projects identified in the modules passed and then continue with that project towards an extended research essay:

Module codes: CSIS7910 (1st semester) or CSIS7920 (2nd semester)
 - Deliverable: Document in which you add additional literature resources (to those gathered in your previous literature review), the Research Hypotheses & Objective(s), Research Design & Methodology, Results & Data Analysis and Conclusions.
 - You will be evaluated on this document by two external examiners.

3.2.1 STRUCTURED MASTER'S IN 1 YEAR

Three modules must be completed in the 1st semester and extended research essay (CSIS7920) must be completed in the 2nd semester. It is, however, possible to spread these modules over 2 years.

3.2.2 STRUCTURED MASTER'S OVER 2 YEARS

All 3 modules must all be completed before you can commence with CSIS7920 (1st semester) or CSIS7920 (2nd semester).

The choice of modules is dependent on whether they are presented in the 1st or 2nd semester. It will be revised every year based on the demand and availability of lecturers.



H. PhD - 2020

1. ADMISSION REQUIREMENTS

- An acceptable Master's degree in Computer Science or IT on SAQA level 9.
- Minimum 60% average for the Master's degree.

2. DURATION

- Full time: Minimum 2 years & maximum 4 years
- Part time: Minimum 4 years & maximum 6 years

3. DEPARTMENTAL RESEARCH AREAS

The topic should fall within the research areas of the department:

Human-Computer Interaction (HCI)

The focus of HCI research is Usability and User Experience (UX) evaluation. Different evaluation methods may be applied, with emphasis on physiological testing involving brain-computer interfaces.

Data Science/Natural Language Processing (NLP)

The research area focuses on algorithms and methods to process big data sets with a data science approach. These datasets are predominately in unstructured natural language text formats (tweets, emails, blogs, reviews, text files etc.). Methods and algorithms include natural language processing (NLP) techniques, text classification algorithms, sentiment analysis, topic modelling, feature extraction, word embeddings (word2vec, doc2vec), machine learning, and deep learning.

Computer Science Education (CSE)

The aim of the Computer Science Education (CSE) research area is to promote research and scholarship both in the field of Computer Science Education and the application of Computer Science to improve teaching and learning. CSE research typically focuses on finding more effective approaches to teach Computer Science to a larger and more diverse audience, or the development of software that can impact upon the teaching and learning environment.

Eye-tracking

Wireless Communication Systems/Artificial intelligence

Wireless Communication Systems: This includes mesh networks, cellular networks, heterogeneous wireless networks, among others employing cross layer design.

Artificial Intelligence: The specific AI topics include but not limited to:

- Probabilistic Inference - this includes: Graphical models, nonparametric Bayesian methods, problem solving and decisions
- Vision – Human Activity Recognition.



Blockchain Technologies

The research area focusses on blockchain technologies. The digital transformation of industries, known as Industry 4.0 has already started and blockchain forms part of the digital revolution. The research areas include blockchain algorithms and data structures, blockchain security, blockchain applications and crypto assets.

4. CODES

Programme codes: BC490022 (Computer Science & Informatics)
 BC490056 (Computer Information Systems)

Module code: CSIS9100

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