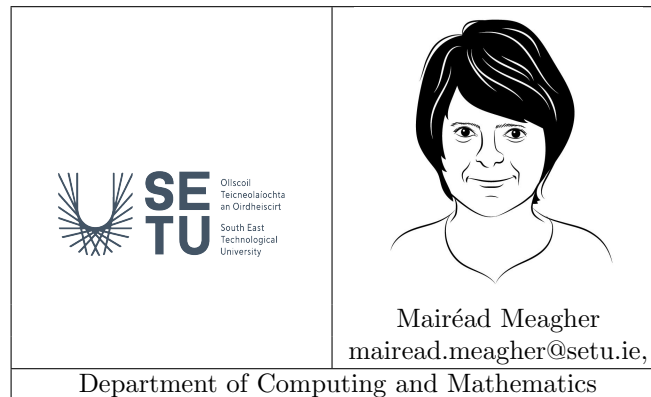


Functional Programming Course Outline and Essential Information

Semester 2 - '24-'25

Mairéad Meagher, SETU.



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1 Module Name

Functional Programming

This is the year 4, semester 2 running of this module in South East Technological University.

2 Lecturer

Mairéad Meagher,

Lecturer in Department of Computing and Mathematics,
School of Science and Computing, South East Technological University.

3 How to reach me

- The quickest way to reach me is via Slack (please join the Functional Programming Slack workspace here). I will be using this as the main form of communication for this running of the module.
- You can also reach me via email: mairead.meagher@setu.ie.
- I am available during work hours from Monday to Friday, 9am to 5pm. You can email me / Slack me outside of these hours and I will reply as soon as I can, but always within three days.(If this does not happen, assume your contact has gone into spam etc. and please re-contact me.) When emailing me, please indicate what module you are taking as well as the nature of your query in the subject line, and do not forget to use an appropriate greeting and sign off.

4 Learning Approaches

4.1 Learning Technologies

We will be using

- **tutors** - This static website will hold all the notes, labs and links to video See Figure 1. This site has the course published as far as we have covered at any time so you can navigate in whatever way suits you. There is a facility to produce a local version (snapshot) at any time. This may be useful if there are network issues during the year. If you would like such a version at any time, just ask me. These obviously will not contain any subsequent updates so use with caution.

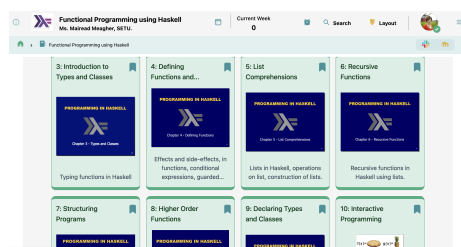


Figure 1: Example of tutors website

- **Moodle** - our learning management system. We use Moodle for
 - Uploading assessments
 - Each week you will be given a todo list of materials/labs/exercises that should be completed before the next week.

4.2 Structure of lectures/ labs

Your timetable structure is:

- 14 weeks (12 weeks of tuition)
- 4 hours per week.

During each of these contact hours, we will have (inter-changeably) either/both:

- Lectures
- Labs practising techniques we have seen in lectures
- Working through/reviewing exercises sheets.

Because of this fluid structure, **I will ask that you bring your laptops to all classes.** If any of you have a problem with this, contact me as a matter of urgency.

The module is broken down into 12-14 topics. These topics are curated on tutors. Each topic will have associated with it:

- Lecture/s
- Labs - either practical work using Haskell or exercises sheets.

5 Module objectives / Learning outcomes

On completion of this module students should be able to:

1. Construct simple and more complex programs in Haskell;
2. Construct basic constructs of Haskell;
3. Use tools to help build Haskell projects, notably GHCi and Stack;
4. Improve the scope of programs by using Haskell libraries;
5. Write programs to solve problems in specific domains, e.g. parsing;
6. Write Haskell programs that call other languages and vica versa.

6 Assessment Breakdown

The assessment in this module is made up of one *formative* and three *summative* assignments.

JAN	WEEK	Class	Assignment	
	1			
	2			
FEB	3		Ass 1	5%
	4			
	READING			
	5			
MAR	6			
	7		Ass2	5%
	8			
	9			0% Form Ass
APR	10			
	11			
	EASTER 1			
	EASTER 2			
MAY	12			40% Handup

Figure 2: Schedule of assessment

COMPLETED	COMPLETED	NEXT DUE	TO COME	TO COME
GHCI lab test	lab test Stack	Form Assign	Prog Assign	Final Exam
5%	5%	0%	40%	50%
Week 3	Week 7	Week 9	Week 12	Week 13/14
11:15 6th Feb	11:15 13th March	18:00 27nd March	18:00, Sunday 5th May	tbc
			Interviews Monday 6th May	

Table 1: Assessment Schedule

The assessment in this module is made up of continuous assessment during the module and a Final Exam at the end of the semester. The schedule is seen at Table 1 - Assignment Schedule.

1. Continuous Assessment (50%) broken into

- In class lab test - 5% - starting using GHCi – this is to ensure that all students are competent in using GHCi and writing small Haskell programs. It includes fixing syntax errors, e.g. filling in missing type declarations in simple functions.
- In class lab test - 5% - using Stack – a simple program using the Stack structure.
- 0% formative programming assignment (phase 1 of programming assignment)
- 40% programming assignment

2. **Written Final Exam** (50%) This will be a written final exam.

The CA is rolled out in the above order so that you, the student, can steadily build up marks throughout the semester.

For all the continuous assessment submitted during the module, you will get your marks back as soon as is possible, but usually within a week. If you are wondering why you got a particular mark, **always** ask me. My marking schemes are very comprehensive and I am happy to go through the breakdowns with you. I don't give this comprehensive feedback by default to speed up the return of the marks but am happy to engage about them later.

For the in-class lab tests, I will give you sample lab tests so that you know the nature of the tests beforehand.

For the programming assignment, a marking scheme will be published with the specification of the assignment. I will ask you to use GitHub Classroom so that I

can monitor your regularity of work on the assignment. The assignment will be broken down into phases, and the first phase will be formative. This is to ensure that you are on the right track. The formative assignment is worth 0% of your module, but by completing it, you will be able to get feedback on your progress and should help you to build your confidence for the remainder of the assignment.

As always, be sure that you are aware of the marking scheme. If there are marks going for a particular part, and you haven't attempted that part, there is nothing I can do.

Always make it easy for the examiner to give you marks!

If you wish to seek an extension for an assignment, you must do so in sufficient time (i.e. not on the day of submission, and not when the submission date has passed) and must provide a valid reason for seeking the extension.

7 Academic Integrity

The School of Science and Computing at South East Technological University are committed to maintaining the highest standards of academic integrity. Academic misconduct, including, but not limited to, cheating may result in a mark of zero for the assignment as well as disciplinary action. Additional sanctions may be imposed depending on the case. You are responsible for

ensuring that you do not get involved in cheating of any kind.

With regard to programming submissions, an interview is mandatory and is part of your assignment mark (as a multiplier). The interview is to ascertain that the work is your own and that you fully understand how it works, in its elemental parts and how it works together.

We will always encourage you to work in collaboration with your fellow classmates. But please be careful not to cross the line between collaboration and using someone else's work.

You will have code suggested to you in most IDE's that you use. Please be careful about accepting the suggested code snippets. You should always fully understand how the suggested code works. It may not always be the best fit for the overall program. Furthermore if you accept the code, you should be able to use it in other places if asked to do so in interview. You should reference any suggested code. It is tempting to copy code. Please do not be tempted to go down this route. I will help you in any way I can during the semester. But if you take this route, I **will** take formal action. That is not a position either of us wish to be in. It is too risky and the penalty can affect your academic future.

8 Important note about engagement in the module and time management

Part of active engagement for any module involves a degree of time management. You will be given exercises and labs to do, sometimes between class times. These will not be graded but, by engaging in these tasks at the time, you will be in a better position to understand the next part of the module. We will approach the module in a step-by-step manner, so opting out at any part will make it more difficult for you to keep up. This is where time management will come in - you need to be careful to ensure that you keep a balance between modules.

Always ask questions, either in class or after class. One way to help to stay engaged is to ask questions if you don't understand what is going on. Remember, when you are asking questions:

- Just the process of formulating and asking a question means that you have learned something.
- If you cannot understand, in most cases, you are not the only one.
- Asking questions means that the pace of the lecture/ labs will suit you better - we will always keep going if there are no questions!

9 Netiquette and Decorum

We will use Slack mainly as our forum for on-line communication. Please follow a number of guidelines in your use of Slack:

- Always remember this is a public forum. Be careful and respectful in what you say. No need to be too formal, but please no text speak or bad language.
- If a question or comment is something that is specific to your situation, please use DM, not a public channel;
- If you are replying to a comment/question on a public channel, please use the 'Reply' to stay in the thread. This leads to a much tidier and more useful channel;
- Please put up your picture up on your profile. I haven't seen you for a while, and then there were masks involved!

9.1 Netiquette

The word netiquette is a combination of 'net' (from internet) and 'etiquette'. It means respecting other users' views and displaying courtesy when posting your views to online discussion groups

- Remember that there is a human being on the other end of your communication

- Treat that human being with respect
- Do not post a message that you would not be willing to communicate in a face to face environment.
- Keep it courteous
- Be kind and professional: Online communication comes with a level of anonymity that doesn't exist when you're talking to someone face-to-face. Sometimes this leads people to behave rudely when they disagree with one another. Online students probably don't have the complete anonymity that comes with using a screen name, but you could still fall prey to treating someone poorly because of the distance between screens. Make a point to be kind and respectful in your comments—even if you disagree with someone.
- Extend your good nature online: The digital world is an increasingly important part of our lives. We should be our best selves there too. The manners our parents taught us apply everywhere.
- Promote healthy discussions: To get the most out of online forums, a useful netiquette guideline is to promote healthy discussion. You can help your online community by posing questions, sharing experiences, providing positive feedback, asking follow-up questions, and referring to information sources. Being a positive contributor is better than being a critic,

troll or other negative force.

- Ignore inflammatory comments by trolls It's generally best to ignore trolls. These are internet users who try to bait other users into a reaction. Trolls might be honest in what they're saying, or they could be sarcastic or deliberately dishonest. You can tell a troll by the inflammatory nature of their statements. They want to stir up negative emotions and responses.
- Respect others as equals: Show a little respect and humility online. Think – that 'idiot' who wrote the opinion you completely disagree with is a human being. They have feelings and experiences. They may believe passionately in what they're saying. And they may actually be right. Even if you're feeling dismissive or knowledgeable or whatever, inject respect into your writing. That's just being fair to others.
- You're here to learn and contribute, not dictate: While we all like to think that our opinion matters, you'll gain more from internet forums by approaching them as a learner. When everyone is trying to express their view rather than hearing from others, forums become noisy, crowded with posts, and disjointed. A more polite and effective path is to adopt a listening mode. Read posts carefully, ask questions, and write something only if it of-

fers value to the discussion.

- Read first Take some time to read through each of the previous discussion post responses before writing your own response. Remember, discussions can move fairly quickly so it's important to absorb all of the information before crafting your reply. Building upon a classmate's thought or attempting to add something new to the conversation will show your instructor you've been paying attention.
- Remember, your words are permanent: Be careful with what you post online. Once it's out there, you may not be able to get it back.
- Make your point in a nice way: Write in a way to get the kind of reaction you want. A little thoughtfulness, strategy and netiquette can go a long way in online discussions. Your first draft of an online post is unlikely to be your best. Are you disagreeing with someone in a flippant way? Have you misinterpreted what they really meant? Will you put people off with the tone of your text.
- Pause before you post: It's worth taking a moment to reflect before hitting the send button. When you're using a computer, you're normally clicking, and scrolling and typing all over the place. Most things are done quickly. But one time when it's important to slow down is when you're about to post something online for all the world to see. Pause and re-

flect for a second. Are you truly comfortable with what you're sending?

- Respect the opinion of your classmates: If you feel the need to disagree, do so respectfully and acknowledge the valid points in your classmate's argument. If you reply to a question from a classmate, make sure your answer is accurate!
- Forgive and Forget If you're offended by something another student says online, keep in mind that you may have misunderstood their intentions. Give them the benefit of the doubt.