

# IRSE // The exam 2020 onwards

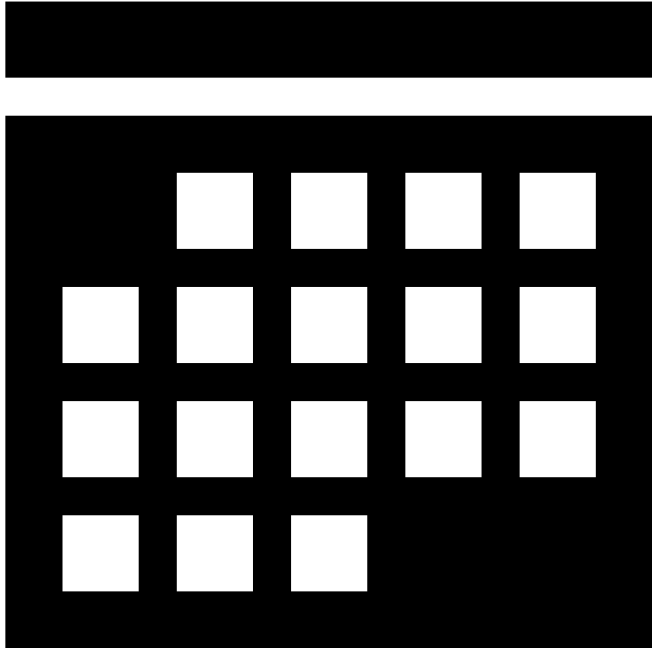
Institution of Railway Signal Engineers

Presented by Judith Ward, Director of Operations IRSE at the 2019 exam review session on 3 March 2020. See [www.vimeo.com/irse](http://www.vimeo.com/irse) for videos of all the sessions, including feedback on Modules 1 to 7

# The exam 2020 onwards

- 2020 and 2021 arrangements
- “New look” exam (modules A to D)
- Module A
- Key dates for 2020

# 2020 and 2021 arrangements



# 2020 arrangements – Candidates can

EITHER sit module A

OR

up to four of modules 1-7

# 2020 arrangements

**Either**

Candidates starting or completing\* their exam journey

## Module A

\* Completion of exam dependent on candidates' existing modules – see <http://irse.info/exam>

No sponsor required

No IRSE membership required if starting exam journey

**or**

Candidates starting, continuing or completing their exam journey

Module 1

Module 2

Module 3

Module 4

Module 5

Module 6

Module 7

Sponsor required

IRSE membership required

# 2021 arrangements

Candidates starting  
their exam journey

No sponsor  
required

No IRSE membership  
required if starting  
exam journey

Specimen questions for Module A  
and example papers for Modules  
B-D are already on the IRSE  
website

Module A

Module B

Module C

Module D

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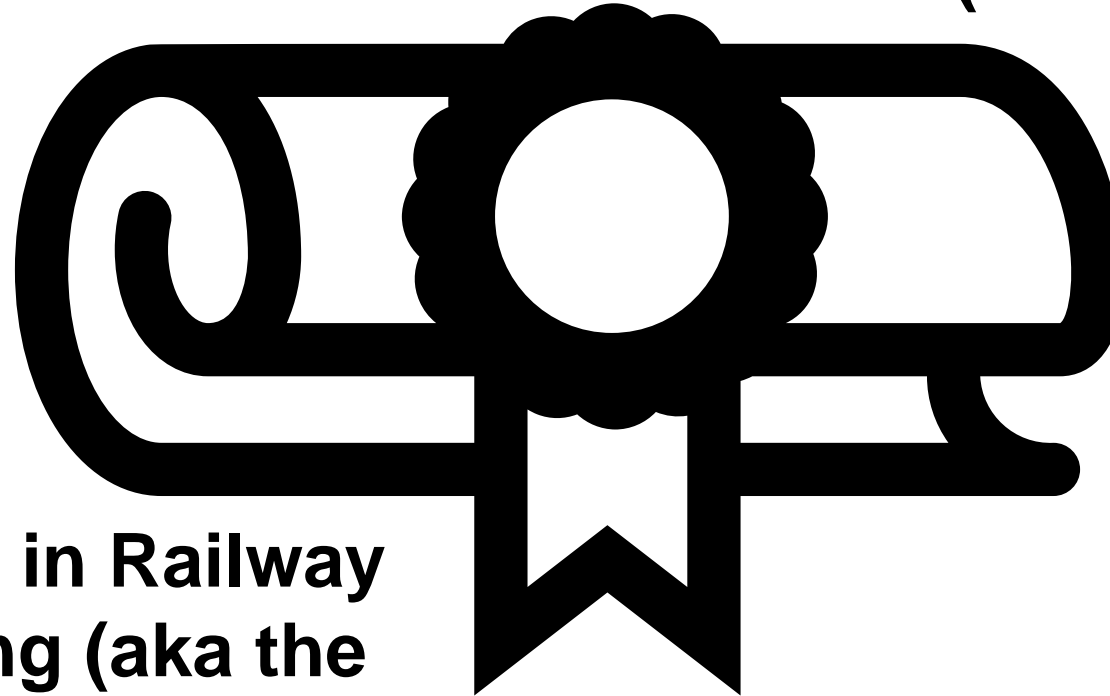
Candidates  
continuing /  
completing their  
exam journey

Sponsorship  
requirements to be  
confirmed

IRSE membership  
required for Modules B to  
D  
If you have passes in  
existing modules (1-7),  
check <http://irse.info/exam>

# The “new look” exam

## Certificate in Railway Control Engineering Fundamentals (aka Module A)



**Advanced Diploma in Railway  
Control Engineering (aka the  
IRSE Professional Exam)**

# The “new look” exam

All four modules are compulsory to achieve the Advanced Diploma in Railway Control Engineering (aka the IRSE professional exam)

Encompasses broad knowledge of all

Module A  
fundamentals of  
railway control  
engineering

Module B railway  
safety and systems  
engineering

= modules 1  
& 7

= modules 2  
(part), 3 & 4

Module C principles  
of railway control  
and communication  
systems

Module D  
applications of  
railway control and  
communication  
systems

= modules 2  
(part), 5 & 6



# The “new look” exam remains...



- the high level that it always has been
  - a “fast track” route to corporate membership of IRSE \*
  - a “top up” for approved qualifications to demonstrate knowledge and understanding for IEng / CEng \*
- \* Experience and responsibility required

# The “new look” exam...

Accepts “older”  
module passes (1-7)  
indefinitely – check  
[www.irse.info/exam](http://www.irse.info/exam)

**IRSE** /// IRSE Exam equivalents  
Institution of Railway Signal Engineers

This online application enables IRSE members who have already passed one or more of the older style IRSE Exam modules (1-7) to identify which additional new modules (A-D) they need to pass in order to be deemed to have passed the Exam as a whole.

Enter the Exam module numbers you have already passed (see examples at the bottom of this page) in the grey field to the right, and then click the SUBMIT button to see which new modules you need to take into order to pass the Exam as a whole:

SUBMIT

*You can enter a total of up to four modules in the field above, using the numbers 1-7 (corresponding to the old style Modules 1-7).*

**Some examples:**

*If you have passed Module 1, you would enter 1.*

*If you have passed Modules 2 and 3, you would enter 23.*

*If you have passed Modules 4, 6 and 7, you would enter 467.*

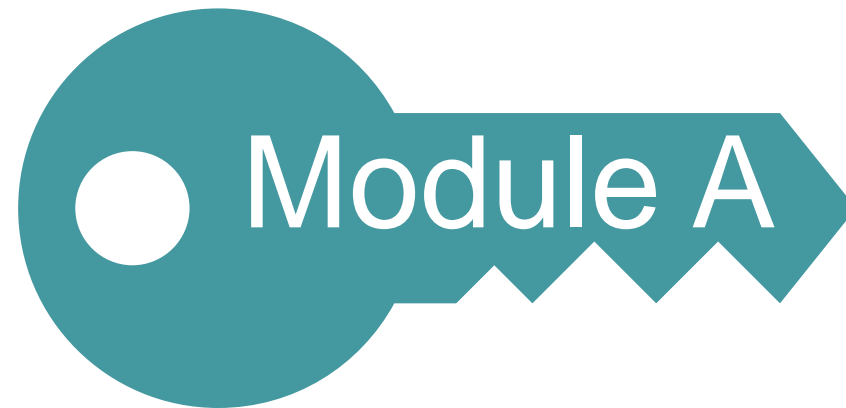
*If you have passed Modules 2, 3, 5, 6, you would enter 2356.*

*The order in which you list the Modules does not matter.*

More information about the IRSE Exam is available on the [IRSE website](#).

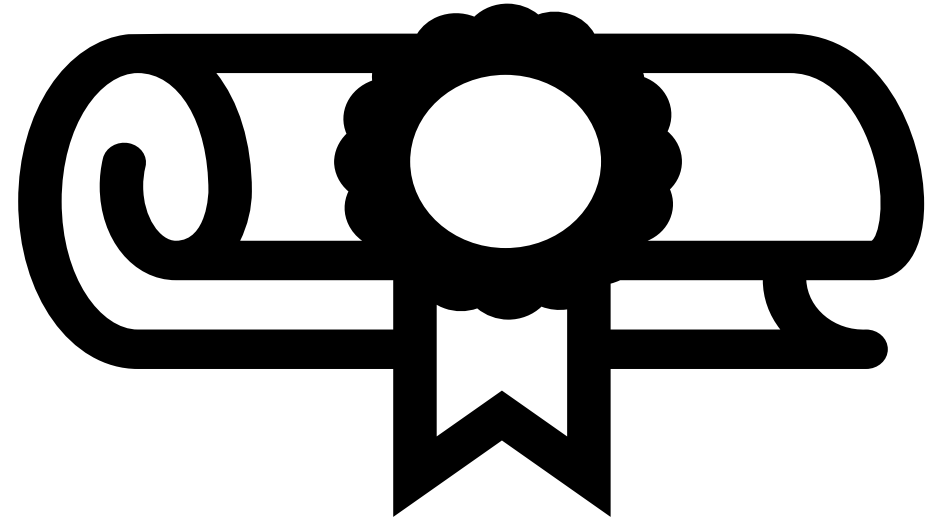
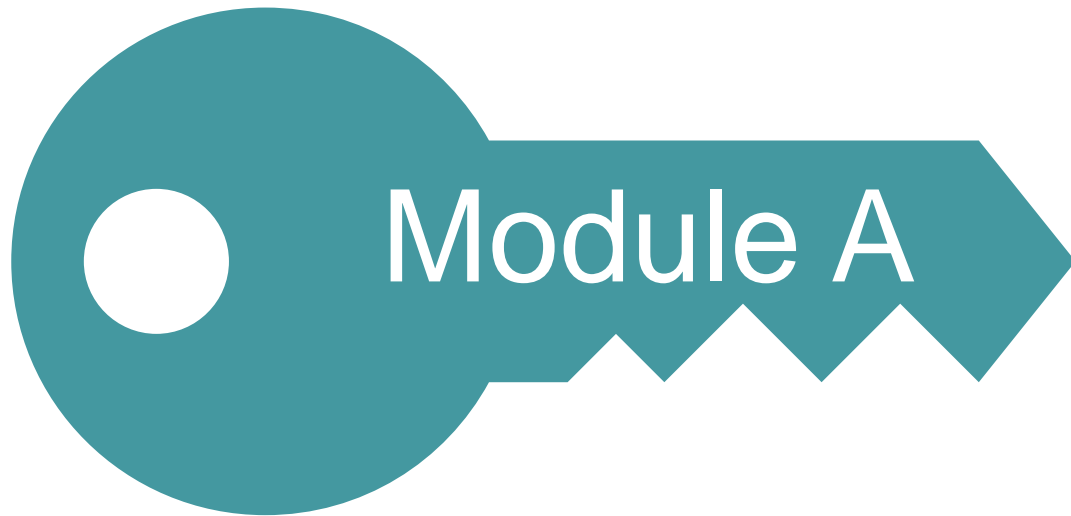
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# Module A



Fundamentals of railway control engineering

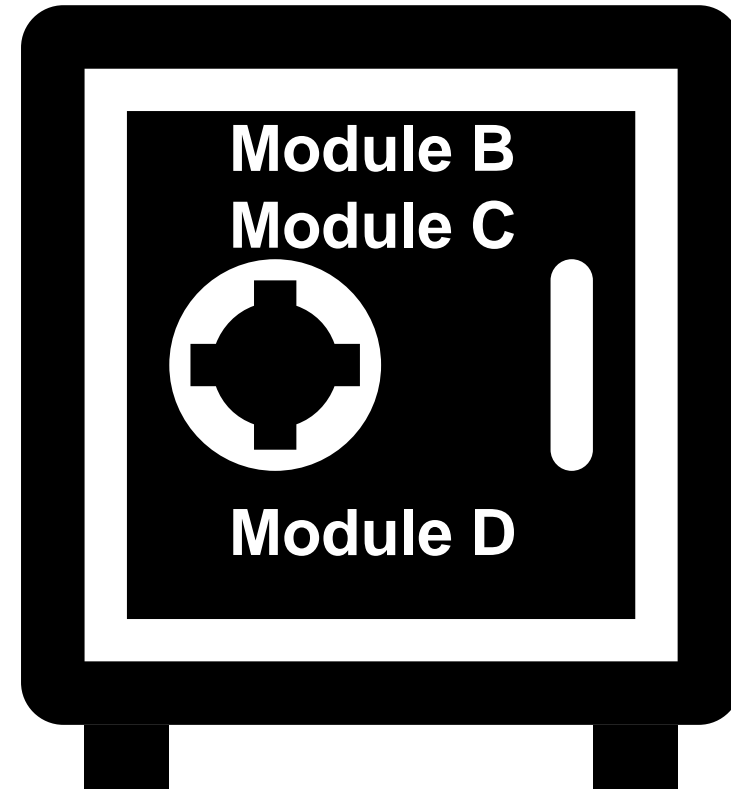
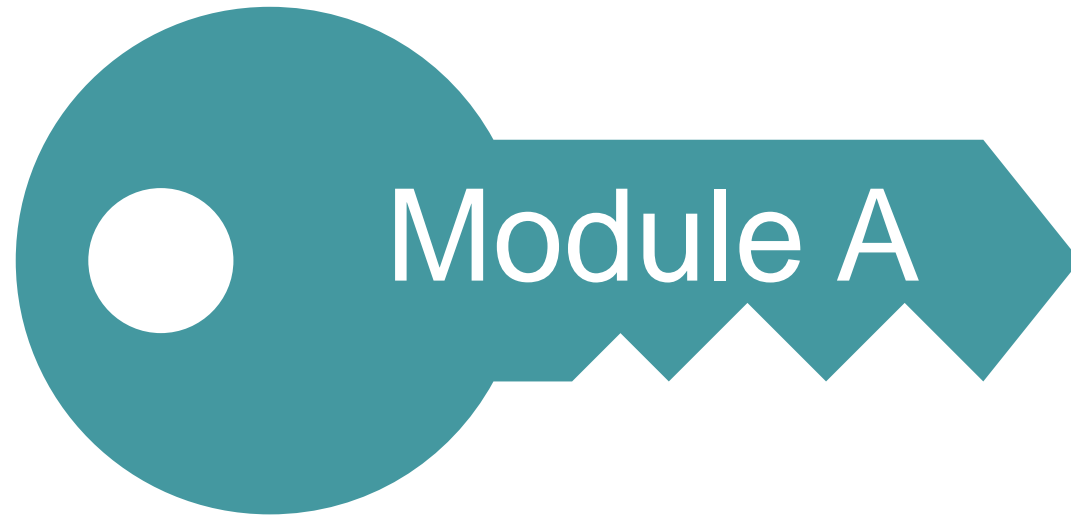
# Module A fundamentals of railway control engineering



Certificate in Railway Control Engineering  
Fundamentals

Certificate in Railway Control Engineering Fundamentals will be a qualification in its own right, suitable for those working with railway control systems staff and projects who would benefit from understanding underlying principles, issues and terminologies. Also suitable for those whose current breadth and depth of knowledge would not enable them to pass remainder of the exam at that point.

# Module A fundamentals of railway control engineering



**Mandatory entrance\* for those wishing to gain Advanced Diploma in Railway Control Engineering (aka the IRSE Professional Exam)**

\* for those starting their exam / advanced diploma journey in 2020/21 and onwards

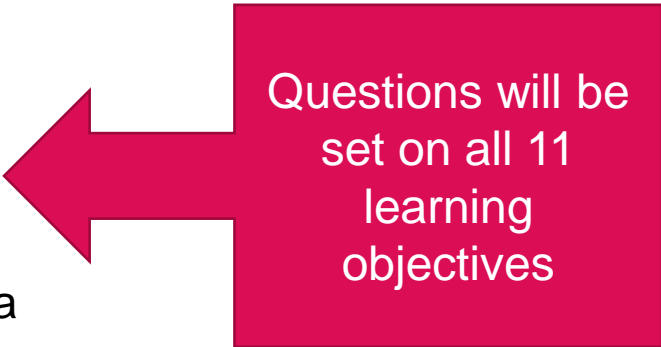
# Module A fundamentals of railway control engineering

*“The aim of this module is to assess the students’ knowledge and understanding of the **broad concepts and principles of railway signalling, telecommunications and systems engineering.** This includes, the **context within which railway signalling, telecommunications and systems engineers work including interfaces with other railway and non-railway systems and processes.** It does not seek to assess in-depth knowledge of any of the subjects.”*


New syllabus for the IRSE Professional Examination v3.0

# Module A fundamentals of railway control engineering – learning objectives

- To understand...
  - Safe and reliable operation
  - Philosophy and high level principles
  - Safety engineering principles
  - Basic concepts of railway signalling and control systems
  - Functionality and potential limitations of equipment
  - Basic concepts of system lifecycle
  - Maintenance, inspection and testing
  - Fail safe hardware and high integrity software design
  - Governance of operating and changing a railway
  - Interfaces and interactions
  - Role of railway control and communications in other than control of train movement
- To be able to...
  - Demonstrate knowledge of the principles, applications and terminology of railway control and communications, its equipment and the interfaces and interactions with related systems



Questions will be set on all 11 learning objectives



It's much more than "just signalling & telecoms (S&T)"

# Module A fundamentals of railway control engineering – resources



*Younger members' section*

**IRSE///**  
Younger Members' section:  
Telecommunications Study Day

This event is aimed at increasing telecommunications knowledge among those in signalling or railway telecoms. The day will consist of a number of talks and demonstrations spanning telecommunications principles, cybersecurity, ERTMS, right down to signal post telephones, all within a railway context. This event will also be useful for those planning to take IRSE exam modules 4, 6, or the new module A in 2020, or the new modules C or D in the future. Booking essential via Eventbrite - irse.info/3kiut

4 April 2020  
Location: Westminster

*Minor railways section*

## Module A: Fundamentals of railway control engineering

- IRSE Exam
- Exam Support Resources
  - Module A
  - Module 1
  - Module 2
  - Module 3
  - Module 4

Exam support resources - Fundamentals of railway control engineering (Module A)  
Application forms for October 2020's exam will be available soon!  
From October 2020, a new qualification will be available called 'Certificate in Railway Control Engineering Fundamentals' which covers all aspects of railway control engineering at a foundation level. This will be a stand-alone qualification in addition to the mandatory pre-qualifier for all wishing to sit the full IRSE professional exam in the future.

The 'Certificate in Railway Control Engineering Fundamentals' will be suitable for a much wider group of people working on or around railway control and communications systems than the full IRSE professional exam. Junior signalling and telecoms engineers, project managers, project planners, software developers and managers of contractors and sub-contractors will demonstrate a broad knowledge of railway control and communications systems engineering by passing this module.

This module will be examined using a computer-based assessment in exam centres across the world with questions covering all 11 learning objectives from the syllabus (see below).

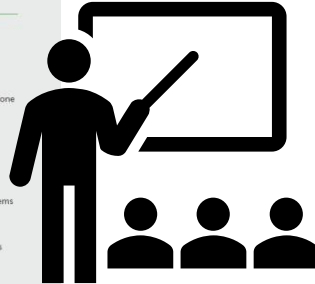
IRSE members and non-members can download support materials for fundamentals of railway control engineering (module A) from the document library below. This will be updated soon with the recommended and additional reading lists.

### Thinking of taking the exam in 2020?

- Please take part in a short survey to help us plan
- You do not need to be a member of the IRSE to sit Module A, but you do need to be a member to sit any of the other modules.
- The application process for candidates wishing to sit the exam in 2020 (the final opportunity to sit modules 1-7 and the first opportunity to sit Module A) will open soon - watch these pages for more information.
- The deadline for applying to sit Module A on 3 October 2020 is **30 June 2020**.

Title	Date
Module A specimen questions (Jan2020)	22-01-2020
IRSE exam syllabus Module A - fundamentals of railway control engineering v3	06-06-2019

## Technical visits



## REF – Combined Institution Events List

REF – Combined Institution Events List

*Study groups*



*Talking to colleagues*

*IRSE local sections*

*IRSE exam forum*

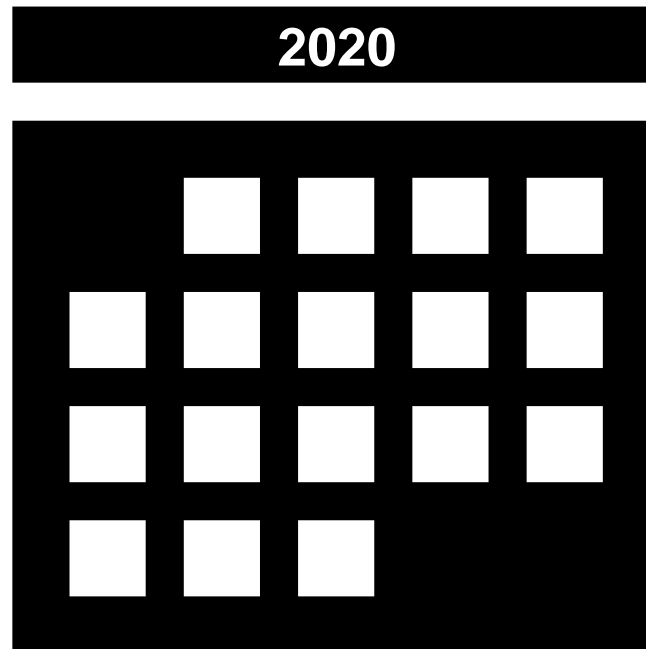


# Module A fundamentals of railway control engineering – the exam



- Computer based exam
- Facilitated in an exam room
- 50 questions (to be confirmed)
- 90 minutes
- “Practice exam” will be available to those signed up for familiarisation of exam software and style of questions

# Key dates for 2020

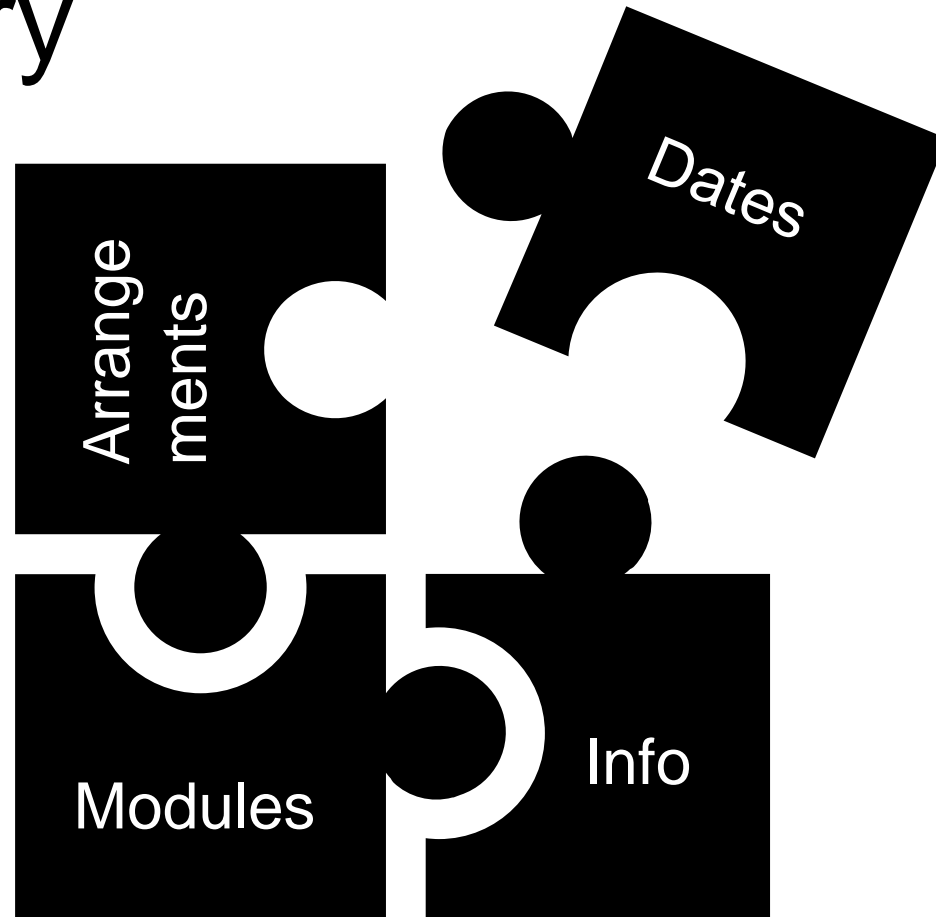


# Key dates for 2020

Module A	
Now	Continue to study
11 March	Online application available
30 June	Online application closes
3 October	Exam day

Modules 1 - 7	
Now	Continue to study and talk to your sponsor
11 March	SDF and guidance available
30 April	Deadline for signed SDFs to be received by office
31 May	Deadline for deferred signed SDFs to be received by office)
30 June	Online application closes
3 October	Exam day

# Summary



# Summary

In 2020 you can either sit module A or one to four modules from 1-7

- This can start, continue or finish your exam journey

For 2020, online applications / SDFs will be available from 11 March, closing date for applications is 30 June

- No exceptions to deadline dates

From 2021, only modules A-D will be available

- Passes in modules 1-7 remain valid, check [www.irse.info/exam](http://www.irse.info/exam)

Check the IRSE website for exam resources

- Not just the exam pages, look at local section meetings / technical visits, study days, knowledge base, IRSE News, etc etc

Exam day is Saturday 3 October 2020