

2ND HEP C++ COURSE AND HANDS-ON TRAINING

18 - 22 JAN 2020

KILIAN LIERET, BENEDIKT HEGNER, SUDHIR MALIK, SAM MEEHAN,
SEBASTIEN PONCE, STEFAN ROISER, GRAEME STEWART



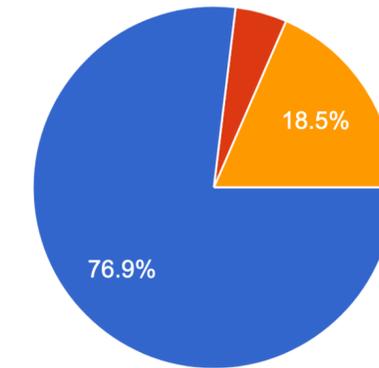
SIDIS
Software Institute for
Data-Intensive Sciences

WELCOME

- ▶ Second edition of a C++ course and training
- ▶ Course material originally prepared by Sebastien Ponce
- ▶ Co-organised by [HSF](#) and [SIDIS](#)
- ▶ Very good echo throughout the HEP community
- ▶ 75 places taken 2 Minutes after registration opened
- ▶ ~ 120 people on the waiting list
- ▶ Please note: We record the morning lectures for eventual further, also online, usage

Physical location

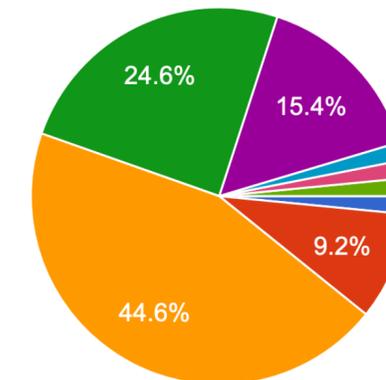
65 responses



● Europe/Africa
● South/North America
● Asia/Australia

Academic level

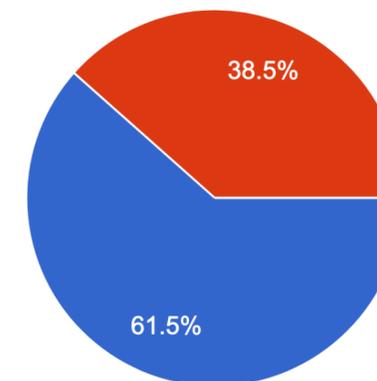
65 responses



● Bachelors Student (Undergraduate)
● Masters Student
● PhD Student (1st or 2nd year)
● PhD Student (3rd year or more senior)
● Post-doctoral Researcher
● (Permanent) Faculty/Staff Scientist
● student research fellow
● PhD

Gender

65 responses



● Male
● Female
● Non-binary
● Prefer not to answer

OVERALL ORGANISATION

- ▶ Feedback is more than welcome
 - ▶ We'll send you a link to a post-training survey on Friday, please fill it it
- ▶ We can provide an attestation of attendance after the course
- ▶ Communication tools:
 - ▶ [This zoom room](#), used for lectures and training
 - ▶ [Mattermost channel](#), interact with organisers, ask questions ([register first](#))
 - ▶ [Training notebook](#), ask longer questions (e.g. code snippets)
 - ▶ Surveys ([pre](#)/post training), please help us to improve the course and training!

MORNING LECTURES

- ▶ Every day, Monday - Friday, 9.00 - 11:45 CST including a 15 minutes break
- ▶ All morning lectures are taught by Sebastien Ponce
- ▶ The slides are available on the indico page
- ▶ Content is organised in smaller chapters (~ 15 minutes each)
- ▶ Please keep questions until the end of a chapter & use "raise hand zoom feature"

Mon	Tue	Wed	Thu	Fri
Basics (syntax, pointers, references, compound types, objects ...)	Object Orientation (classes, inheritance, virtuality, operators, ...) Constness	Tools (git, compile chain, gdb, valgrind suite, ...)	Core modern C++ (move semantic, templates, lambdas, STL, RAII, ...)	Python & C++ , Concurrency, Expert C++

AFTERNOON TRAININGS

- ▶ Every day Monday - Thursday (no training on Friday), 14.00 - 16.00 CST
 - ▶ Is it possible to start the Monday exercise at 13:30?
- ▶ A set of examples are provided at the end of the morning
- ▶ Organised in "breakout rooms", 1 mentor / ~ 11 students
 - ▶ Connect again to **this zoom room** and you can join breakout rooms from here
- ▶ Style "a la university lab", i.e. students work mostly on their own, ask mentors for help in case they have questions or get stuck

Mon	Tue	Wed	Thu
Setup of development environment	C++ exercises	Exercises with tools	C++ exercises

ATTENDANCE CERTIFICATE

- ▶ ~ 80 % of you prefer to have an attendance certificate
- ▶ Please drop me a mail if you want to receive one
- ▶ Please also make yourself "findable" in zoom (i.e. use a name that we can associate to your registration)
- ▶ Are you interested to have this course accredited with your university (e.g. via ECTS points)?
- ▶ We cannot promise that this works but we can try to provide additional info if needed
- ▶ Please also drop me a mail if you need support or you were successful.



CERTIFICATE OF PARTICIPATION

Amy Farrah Fowler

has attended the first **HEP C++ Course and Hands-on Training** from **12 - 16 October 2020**

The course was organised into 12.5 hours of lectures and 8 hours of training sessions.

The lessons were taught by Dr. Sebastien Ponce (CERN) and the training sessions supported by mentors from within the high energy physics community.

The course content ranged from basic to advanced concepts of C++ software engineering and included up to the C++ '17 ISO standard.

The event was co-organised by the training working group of the **HEP Software Foundation*** and the **Software Institute for Data Intensive Sciences****

More information about the event can be found at <https://indico.cern.ch/e/cppfall20>

Dr. Graeme A Stewart

CERN / HSF

Dr. Sebastien Ponce

CERN / Course Lecturer

Dr. Stefan Roiser

CERN / SIDIS

* <https://hepssoftwarefoundation.org>

** <https://sidis.web.cern.ch>

AFTERNOON BREAKOUT TRAINING ROOM ORGANISATION

Many thanks to all
volunteering mentors:

Room	OS (Mon)	Mon	Tue	Wed	Thu
A	Win, Lin	Graeme	Stewart	DavidC	DavidC
B	Win, Mac	Attila	Walter	Attila	Walter
C	Linux	Benedikt	DavidS	Benedikt	DavidS
D	Linux	Stephan	Martin	Stephan	Martin
E	Linux	Sebastien	Andrea	Andrea	Sebastien
F	Lin, Mac	Stefan	Stefan	Riccardo	Riccardo
G	Win, Lin	Bernhard	Ben	Bernhard	Ben

The OS version is only relevant for the Monday afternoon (setup of the environment)

Tue - Thu you should can join any room

DAVID CHARMONT
STEWART MARTIN-HAUGH
GRAEME STEWART
ATTILA KRASZNAHRKAY
BENEDIKT HEGNER
DAVID SMITH
BEN COUTURIER
RICCARDO MARIA BIANCHI
STEPHAN HAGEBOECK
SEBASTIEN PONCE
ANDREA VALASSI
BERNHARD GRUBER
MARTIN RITTER
SR

Amy

Questions

Please contact us also at hep-cpp-course-organizers@cern.ch