Instructions of Digital Courses on Biosafety and Biosecurity for New employees of Biological Laboratories （Excluding High-Containment Laboratories） and Biological Material Banks in Academia Sinica.

Welcome to join Academia Sinica family. According to article 21 in “Regulations Governing Management of Infectious Biological Materials” amended date on Dec. 15 2021 in Taiwan （R.O.C.）, new employees of a laboratory or storage facility shall attend at least eight hours of foundation courses on biosafety and biosecurity. The definition of “new employee” for Academia Sinica in this document is who never works in biological lab or has left for over one year. New employees who is going to work in a facility that conducts testing of communicable diseases or stores, uses, or disposes of infectious biological materials have to follow these instructions. These facilities may be BSL-1/ BSL-2/ ABSL-1/ ABSL-2 laboratory or RG1/ RG2 Biological Material Bank（BMB）. Only who operates infectious biological materials in risk group （RG） 1 and 2 shall attend foundation courses. Please ask your supervisor for which required courses that you are going to take based on Table 1.

Biosafety Office of Academia Sinica wrote this document to help new employees to **fulfill this request before starting to work**. Accordingly, new employees must attend and get certificates of those foundation courses listed in Table 1. DO NOT work in any facility before you follow these instructions in this document and get response from Biosafety Management Committee in your institute or research center. For someone who already has certificates of similar courses list in table 1. Please check step 7 and 8 to email required documents to Biosafety Management Committee in your institute or research center. For those who needs certificates, Biosafety Office recommends a wonderful e-learning portal provided by Public Health Agency of Canada for you to learn a common understanding of the principles and practices of biosafety and biosecurity at any time. Please follow these steps to enjoy your courses and get certificates on these required courses in Table 1.

Figure 1 QR code and website https://training-formation.phac-aspc.gc.ca/?lang=en

Table 1 Digital Biosafety and Biosecurity Course for New employees in Biological Laboratories （Excluding High-Containment Laboratories） and RG1/RG2 Biological Material Banks（BMB）.

No	Main topic	Course name	BSL-1/-2, ABSL-1/-2 Lab & RG1/RG2 BMB	Course time# (mins)	Approved course time* (hours)
1	Biosafety	Introduction to Biosafety	O	45	1
		Personal Protective Equipment	O	45	1
		Biological Safety Cabinets	O	45	1
		Laboratory Acquired Infections	O	45	1
		(Other course on this topic)	O		
2	Biosecurity	Introducing Biosecurity	O	45	1
		Biosecurity Plan	O	30	1
		Insider and Outsider Threats	O	75	1
		(Other course on this topic)	O		
3	Risk Assessments	Pathogen Risk Assessment	O	45	1
		(Other course on this topic)	O		
4	Containment	Containment Level 1 Operational Practices	△[a]	75	1
		Containment Level 2 Operational Practices	△[b]	45	1
		(Other course on this topic[#])	O		
5	Decontamination / Waste Management	Decontamination in the Laboratory	O	45	1
		Decontamination Technologies	O	45	1
		Autoclaves	O	60	1
		Chemical Disinfectants	O	45	1
		Biomedical Waste	O	60	1
		(Other course on this topic[#])	O		
6	Working with Animals	Working with Small Animals in Containment	△[c]	90	2
Estimated certified course hours			**It depends on the chosen course. At least 8 Approved hours.**		
Certificates PDF files			**It depends on the chosen course. At least 8 certificated PDF filse.**		

Note 1：“O” required; “△[a]” required for BSL-1/ABSL-1 Lab; “△[b]” required for BSL-2/ABSL-2 Lab; “△[c]” required for ABSL-1/ABSL-2 Lab.

Note 2：Using a cell line, complete the required courses and hours in accordance with the laboratory biosafety level recommended by the supplier.

#: Course time：It depends on the chosen course. It needs more 30 mins.

*：Approved course time：If the course duration is between 30 and 60 minutes, the approved course hours will be 1 hour.

■ Introduction

This e-learning portal of Public Health Agency of Canada provides rich training resources as shown in figure 2. **Only some courses in category "Laboratory Biosafety and Biosecurity" are required.** Please refer Table 1 to recheck your required courses.

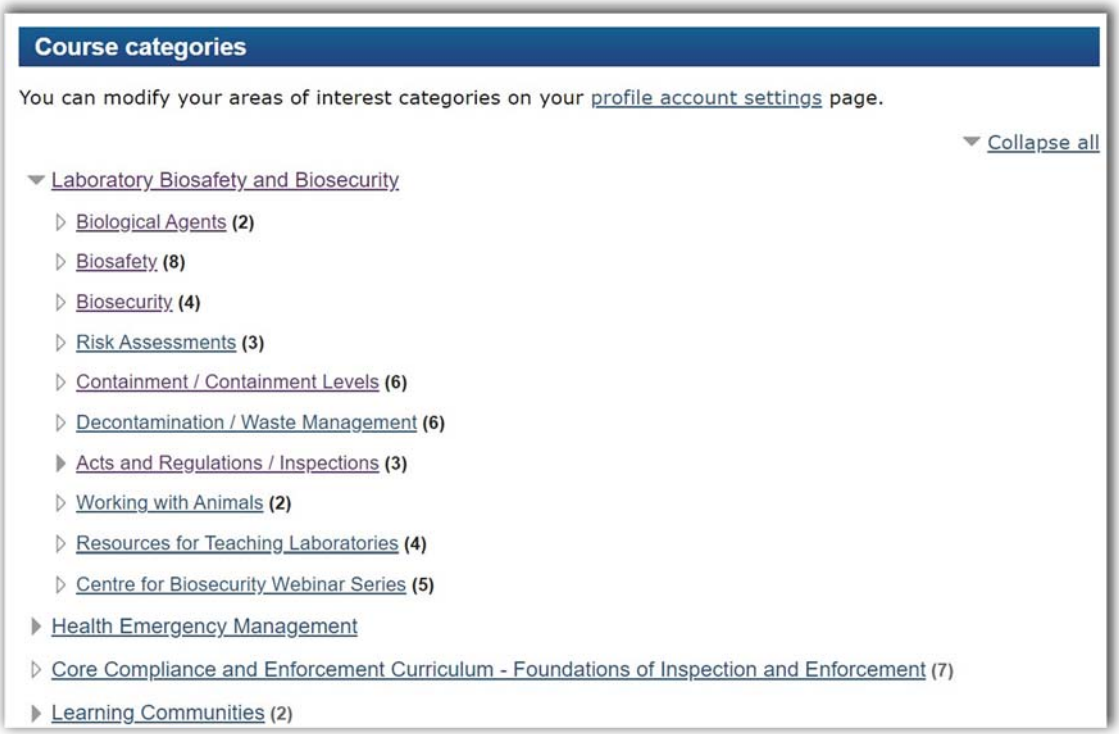


Figure 2 Partial courses list.

■ Get ready

You could have an overview on this website via any displayer. However, this e-learning portal only accept either Google Chrome or Microsoft Edge to register and take courses.

Figure 3

https://training-formation.phac-aspc.gc.ca/?lang=en

Figure 4 website and QR code.

Let's get started !

■ Step 1: Create your own account

It is important to register your own account. Set your **username either as passport name or name on your Academia Sinica ID**. If username is duplicate, use your birth date as addition character in username. For example: joannehu, joannehu0101, jacklee, jacklee1225.

This portal will send you a confirmation letter to your email account. Click the linkage or follow its instruction to activate your account. **Always Log in your own account before taking courses.** This portal will record your progress of courses.

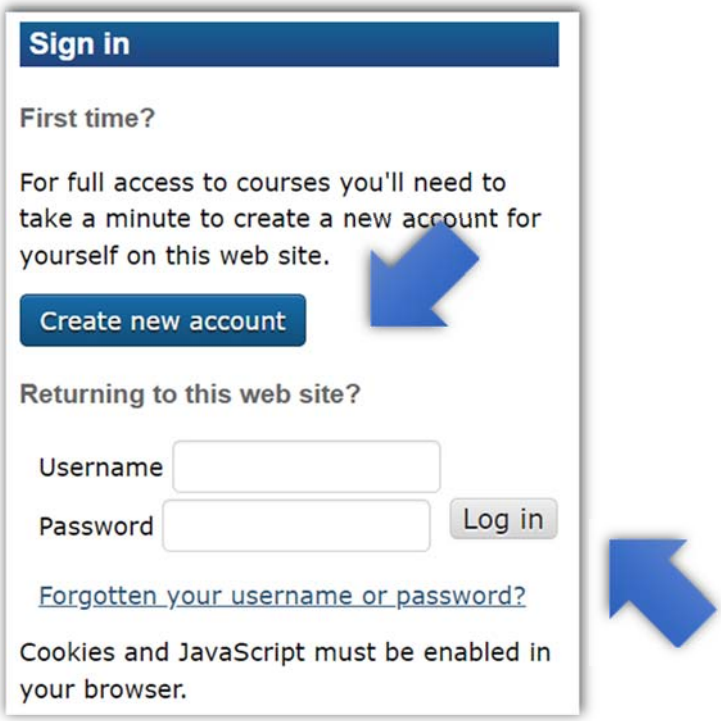


Figure 5-1-1 "Sign in" page on this e-learning portal.

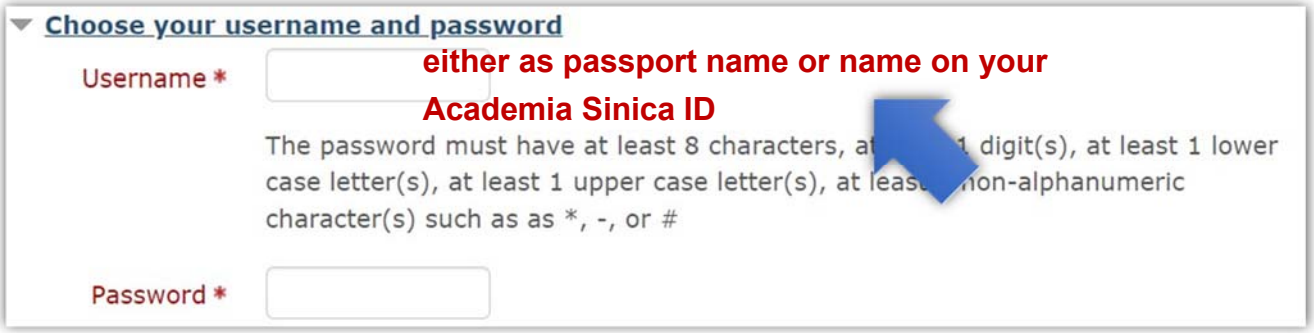


Figure 5-1-2 Create a new account.

■ Step 2: Overview courses and see its introduction

Click “Courses” bottom and choose your required courses on table 1 according to your laboratory type. It is okay if you want learn more or renew your knowledge on other courses.

Figure 5-2 “Courses” page on this e-learning portal.

■ Step 3: Remember to log in your own account and enroll your course

Take this as an example to showcase how to enroll a course.

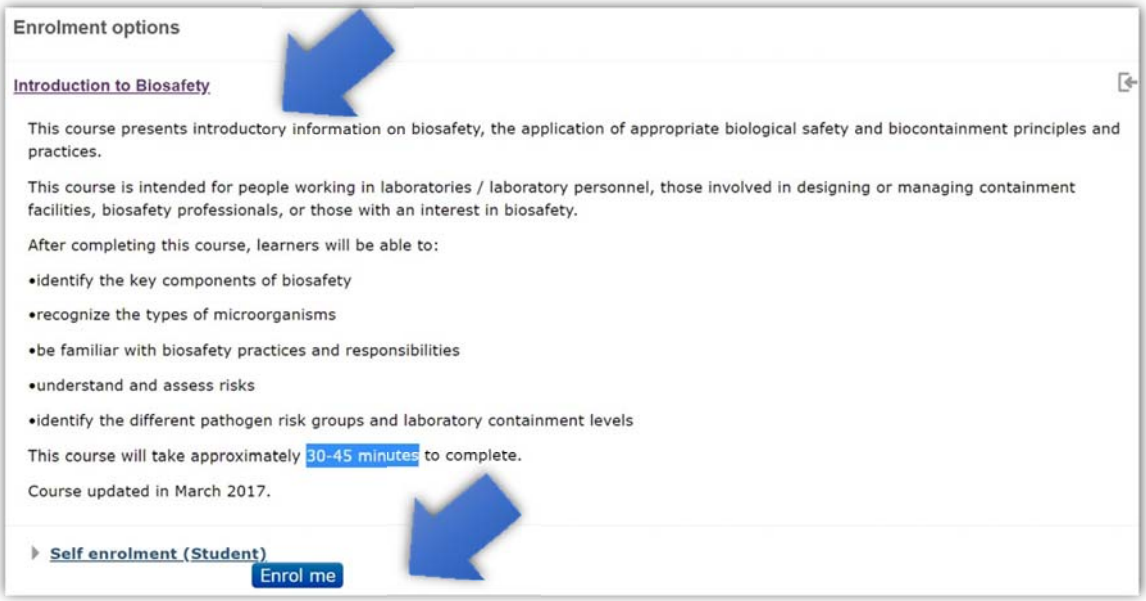


Figure 5-3-1 Click “Introduction to Biosafety” or “Enroll me”.

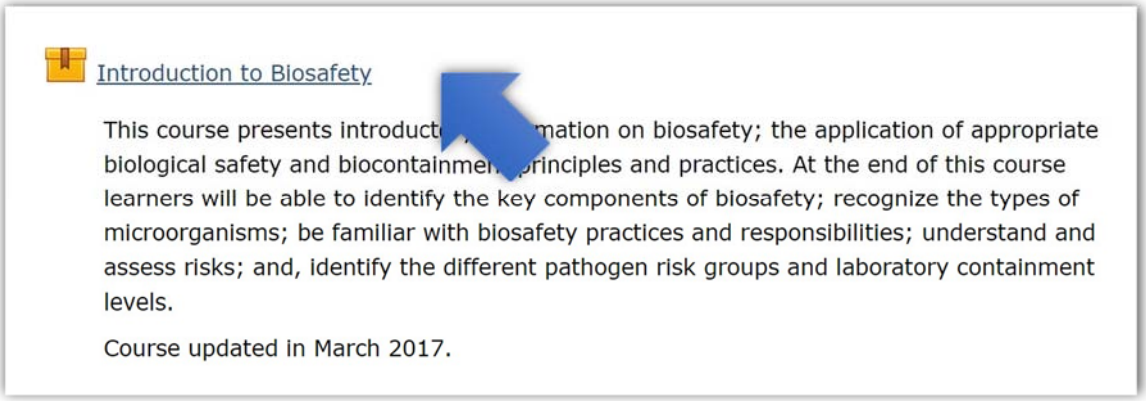


Figure 5-3-2 Click again to open another webpage as shown in Figure 5-3-3

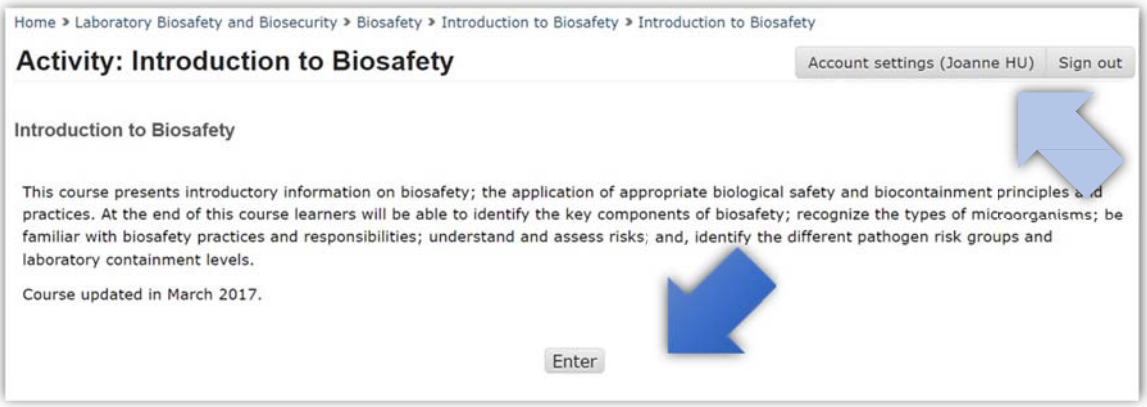


Figure 5-3-3 Click “Enter” to start this course. Remember to log in your own

account.

■ Step 4: Enjoy your course

Some courses provide both English and French. However, you must choose **English** as English is usually the one to communicate with your supervisor and coworkers in Academia Sinica. It is okay if you want to join the French ones for your own interests.

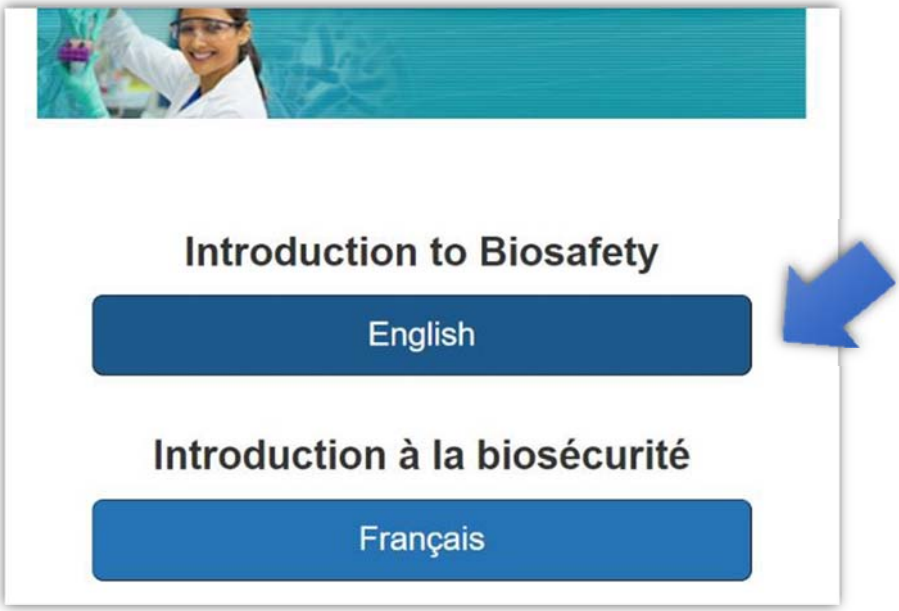


Figure 5-4-1 Some courses provide both English and French.

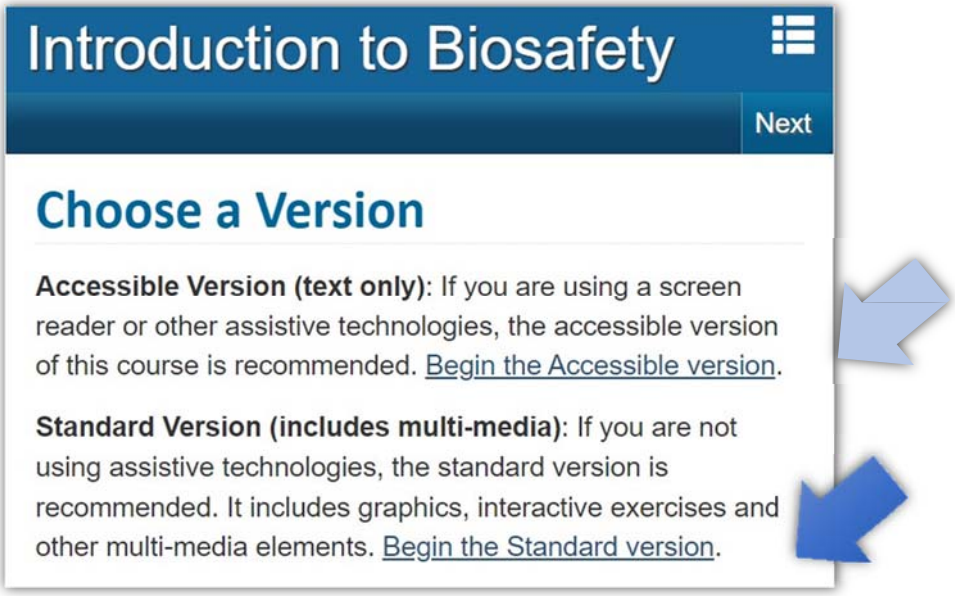


Figure 5-4-2 Some courses provide two versions. Standard version is highly recommended.

Now you are successfully joining this course now.

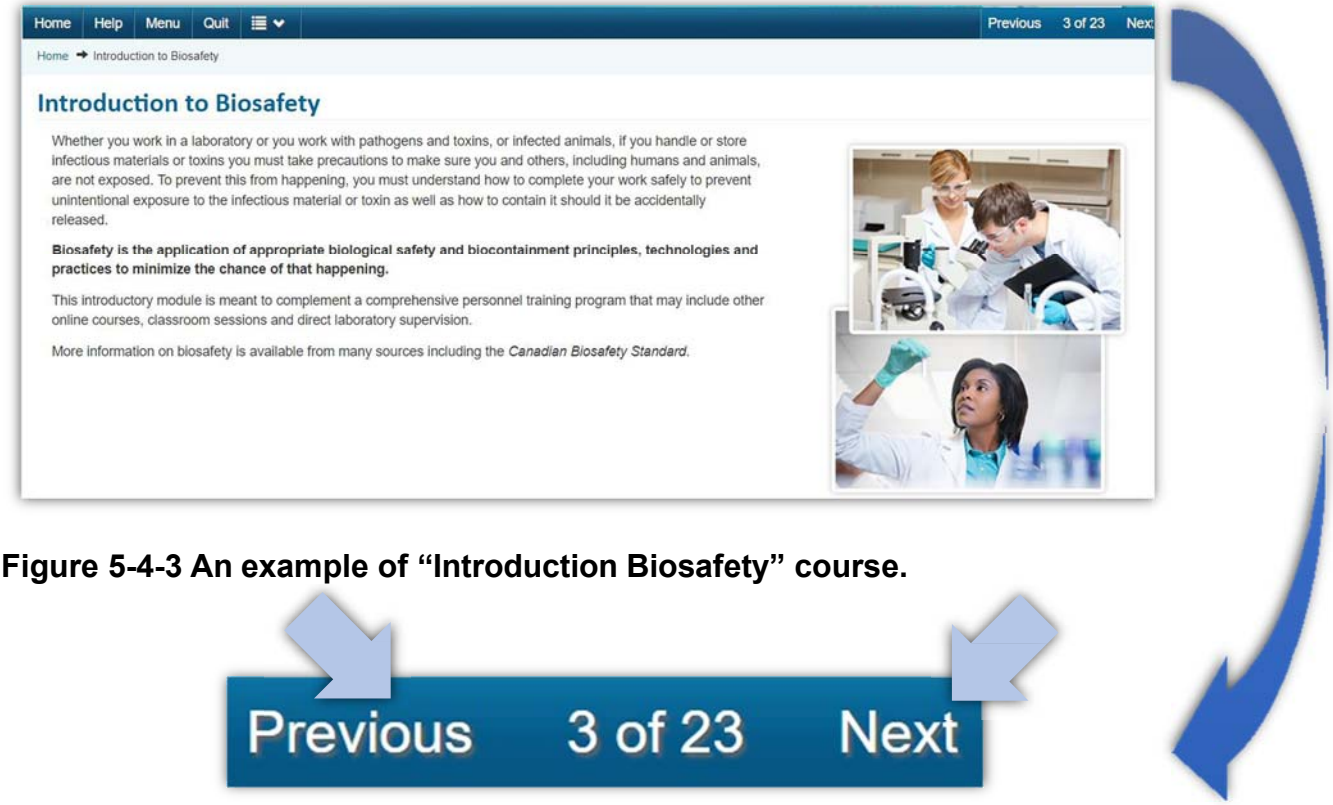


Figure 5-4-3 An example of "Introduction Biosafety" course.

Figure 5-4-4 Use "Previous" and "Next" bottoms to move back and forward.

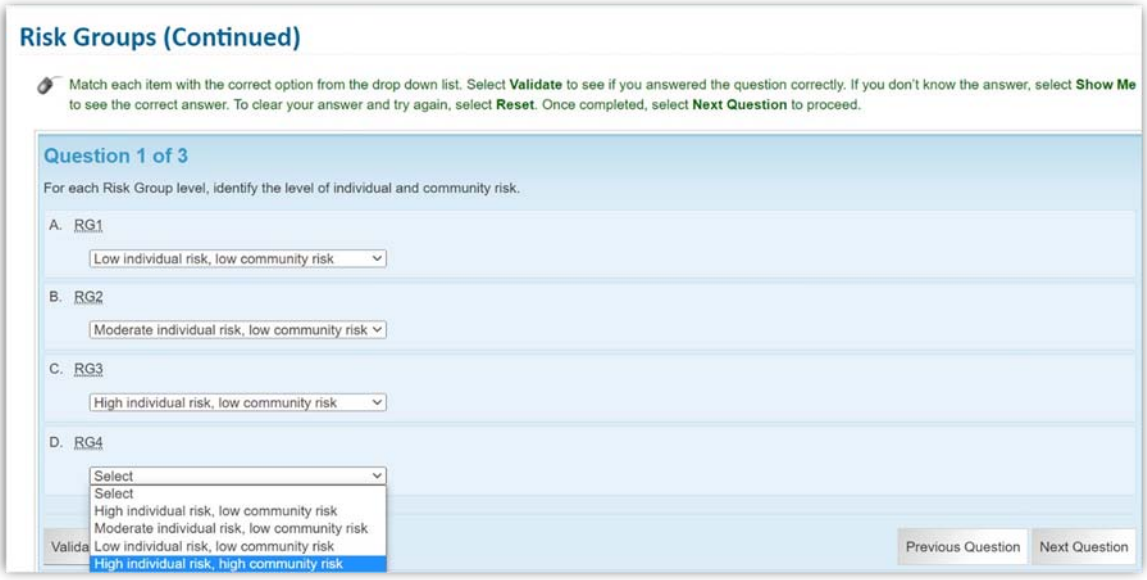


Figure 5-4-5 Mind the quiz or knowledge check to enhance your understanding.

■ Step 5: Course Complete and how to close it properly

After you finish this course, there will be an image shown as" Course Complete"（Figure 5-5-1）. Remember to click "Quit" on Figure 5-5-1 and the "To exit the course click here" on Figure 5-5-2 to close this course properly. You may lose your record by not doing so.

Figure 5-5-1 Click "Quit".

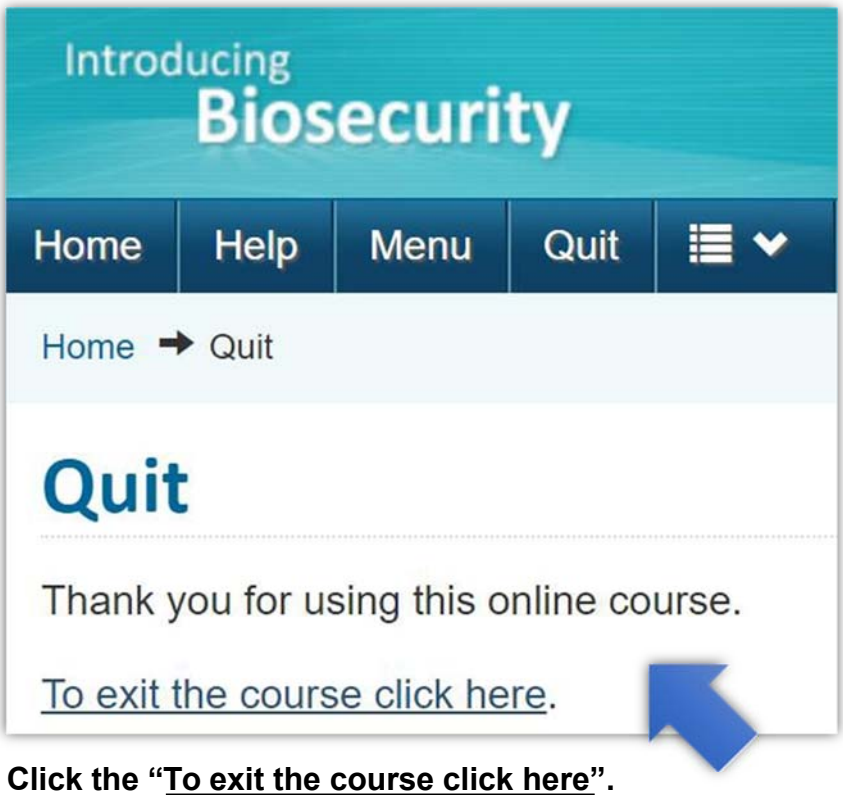


Figure 5-5-2 Click the "To exit the course click here".

■ Step 6: Check your certificate and download it

One or two days after you complete your course, you will get your certificate on this portal. Here is an example showing how to download it. Please follow figures 5-6-1 to 5-6-4.

Figure 5-6-1 Click “My courses”.

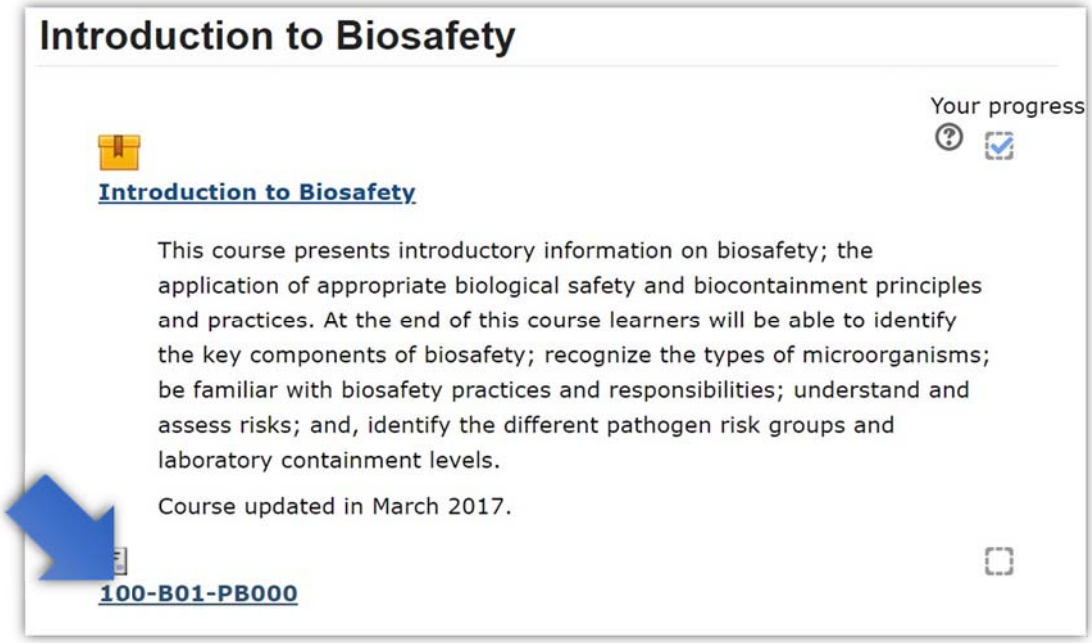


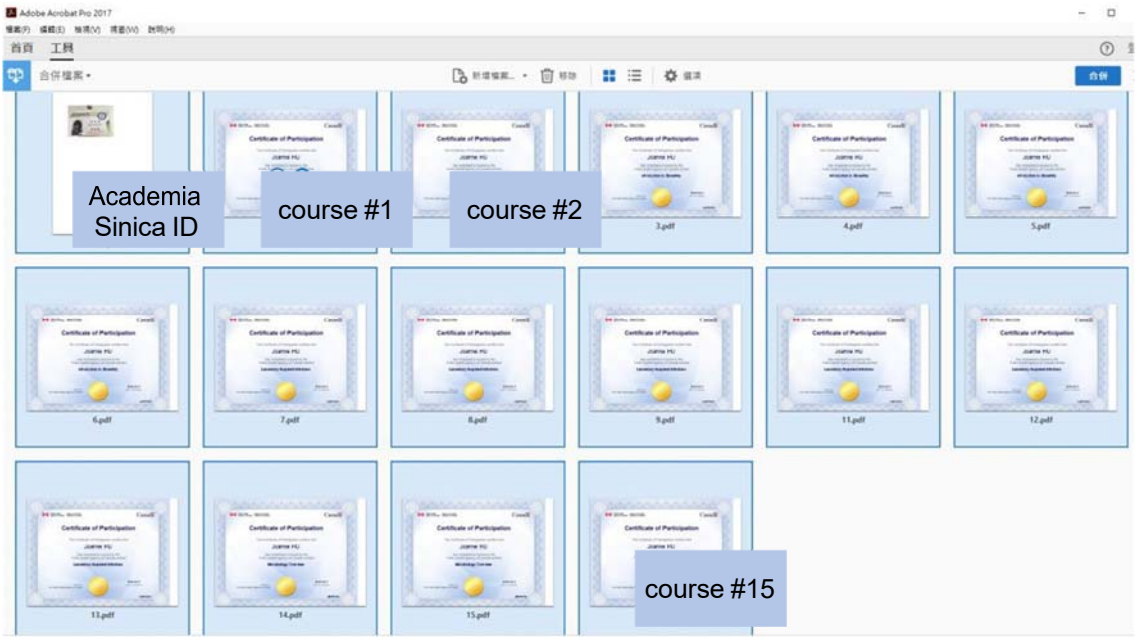
Figure 5-6-2 If there is a certificate, it is shown here. Click the link.

Figure 5-6-3 Click "Get your certificate".

- **Figure 5-6-4 Save this original "certificate" PDF file in your computer. Name these files in number list in Table 1 for the next step. Take this as an example. The filename is "1" for this "Introduction to Biosafety" certificate.**
- **Check points of a right certificate: 1. Your name; 2. Course name; 3. Completion date.**

■ Step 7: Prepare your documents into one PDF file

Take a photo of your Academia Sinica ID and save it into a PDF file. Merge this PDF file on the first page with your all certificates PDF files by being sorted in course number into one PDF. （see figure 5-7-2 as an example.）



■ **Figure 5-7-1 A domo image when merging these PDF files**

■ **Figure 5-7-2 Merge all PDF files into one PDF file which its file size should be less than 2MB. If not, decrease the image resolution of your Academia Sinica ID photo.**

■ Step 8: Email to Biosafety Management Committee

Write an email as shown below and attach your PDF file to Biosafety Management Committee in your institute or research center. Someone works for the committee will review, check and reply to you. When receiving an email notification on approval from Biosafety Management Committee in your institute or research center, you are ready to work in the lab that you apply.

To	Please check the email list on table 2 for the contact person
Subject	new employee_certificates_your name
CC	your email address

Biosafety Management Committee,

Here is my information. The attached one PDF file contains my Academia Sinica ID and those certificates sorted by course number.

I solemnly declare that I am honest to take those required courses based on which risk group of infectious biological materials that I am going to operate.

Please take a look and let me know if I can start to work. Thanks!

My information:

1. I am a new employee in Academia Sinica in year 20XX.
2. My name on Academia Sinica ID is O O.
   format: first /given name last name/surname/family name
   example: Joanne Hu

3.My name on those certificates is O O.
   format: first /given name last name/surname/family name
   example: Joanne Hu

4-1. I am going to operate infectious biological materials of （which risk group） in which BSL lab（s）? single or multiple answers
   example: RG1 and RG2 in BSL-2

4-2. My supervisor（s） is（are） O O O, institute/research center.
   example: Dr. Chien-Chang Chen, Institute of Biomedical Sciences.

■ **Table 2 A contact person list of Biosafety Management Committee in each institute or research center in Academia Sinica.**

Updated on Feb 24, 2023

No	Institute or research center	Contact person	Email address
1	Institute of Physics	Mr. KUAN-MING CHEN 陳冠銘 先生	ckm053@gate.sinica.edu.tw
2	Institute of Chemistry	Ms. YOU-YU KUO 郭祐語 女士	yykuo@gate.sinica.edu.tw
3	Institute of Statistical Science	Ms. Shu-Yun LIN 林淑雲 編審	syl6158@gate.sinica.edu.tw
		Ms. Amy REN 任春美 女士	amyren@gate.sinica.edu.tw
4	Institute of Atomic and Molecular Sciences	Ms. Bunny WANG 王瓊鈴 女士	bunnyqwang@gate.sinica.edu.tw
		Dr. Wei-Chun HUANG 黃維君博士	chun5200@gate.sinica.edu.tw
5	Institute of Plant and Microbial Biology	Ms. Li-Ling TSAI 蔡麗玲 技佐	tsai2801@gate.sinica.edu.tw
6	Institute of Cellular and Organismic Biology	Mr. Chih-Ming CHANG 張志明 編審	h3034@gate.sinica.edu.tw
		Mr. Jyh-Yi WANG 王錶義 技士	mrcell@gate.sinica.edu.tw
		Mr. Chih-Hao WEI 魏智浩 先生	wjh2213@gate.sinica.edu.tw
7	Institute of Biological Chemistry	Ms. Wei-wen LAN 藍蔚文 技士	wwlan@gate.sinica.edu.tw
8	Institute of Biomedical Sciences	Ms. Aileen Ngo DEE 李婷婷 女士	and@gate.sinica.edu.tw
		Ms. LI-FANG LI 李莉芳 女士	lifunlee@gate.sinica.edu.tw
		Ms. KA-BIK TAM 譚家碧 女士	tamkabik@gate.sinica.edu.tw
9	Institute of Molecular Biology	Ms. Yu-Hsin Kao 高玉馨 女士	truth@gate.sinica.edu.tw

No	Institute or research center	Contact person	Email address
		Mr. YEIN-GEI LAI 賴彥鉍 先生	mbyl@gate.sinica.edu.tw
10	Biomedical Translation Research Center	Ms. Hsiu-Ting HSIEH 謝秀庭 女士	hht0910@gate.sinica.edu.tw
		Mr. Yih-Yang SHEU 許逸洋 先生	gc6890ms@gate.sinica.edu.tw
11	Research Center for Applied Sciences	Dr. Shu-Yi HSIEH 謝書宜 博士	shuyihsieh@gate.sinica.edu.tw
12	Genomics Research Center	Dr. Shin-Lin Chuang 莊士麟 先生	shihlin@gate.sinica.edu.tw
13	Biodiversity Research Center	Ms. Yu-Wen CHANG 張寓雯 女士	aicbrcas@gate.sinica.edu.tw
		Mr. Ming-Jhe WANG 王明哲 先生	as0190490@gate.sinica.edu.tw
14	Biotechnology Center	Ms. Sally WANG 王雅霆 女士	sally13@gate.sinica.edu.tw
		Mr. Cheng-Pu WU 吳承蒲 先生	bioeric@gate.sinica.edu.tw
15	None of the above	Joanne HU 胡淑娟 女士	joannehu@gate.sinica.edu.tw

■ Gentle reminders from Biosafety Office in Academia Sinica

Thanks for your cooperation and congratulations on fulfilling the basic requirement before you work in any laboratory or storage facility. Always remember these foundation courses and resources are for you to minimize biosafety risks. Moreover, every laboratory or storage facility is responsible for providing best practices based on its local risk assessment. Most importantly, it is employee's responsibility and obligation to correctly comprehensively follow the guidance and standard operating procedures （SOPs） in your workplace.

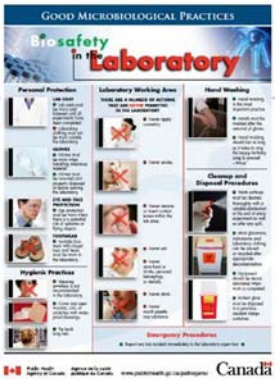
Biosafety Office would like to quote a subtitle from *Nature* to emphasize persistently how important it is about biosafety. This reminds all new or existing employees that always keep foundational knowledge about biosafety and biosecurity, especially for whom is lack of skills and experiences in operating a whole new procedure. A partner system is also highly recommended for lab supervisors when training new employees. Moreover, a gentle reminder for **experienced** employees is reviewing foundational knowledge as you are a new employee when you are back from leaving for a period of time.

> ***"It's never a dull day for those tasked with keeping biological research safe for all."***

According to the same Article 21 mentioned on page 1 "Personnel working at a laboratory or storage facility shall attend **at least four hours of continuing education courses on biosafety and biosecurity every year**". Biosafety Office will arrange continuing education courses or you could check Canada's e-learning portal to learn more about biosafety at any time.

■ More information

Those informative posters will be useful for you. Download and post on your workplace.



■ Reference

Kendall Powell, Behind the scenes in the biosafety office, Nature, 04 March 2020, accessed on 09 Feb 2023, https://www.nature.com/articles/d41586-020-00593-5

Title: Regulations Governing Management of Infectious Biological Materials, amended date: 2021-12-15, Ministry of Health and Welfare, Taiwan （R.O.C.）

https://law.moj.gov.tw/ENG/LawClass/LawAll.aspx?pcode=L0050029