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**1**

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**1.1**

2011

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” 2010

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” 2015

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1.0

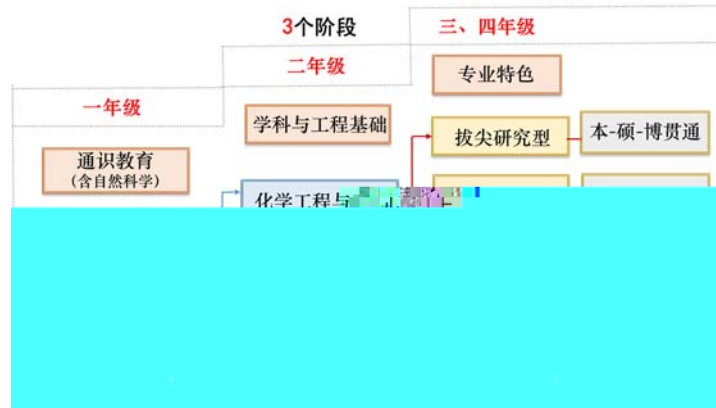
”

“

” 4

## 1.2 “1-2-3”

“ — — ”3 “ ”1 2



1. “1-2-3”

## 2

MIT

“ — — — ”

## 2.1

2030

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“ ”

## 2.2

“ — ”

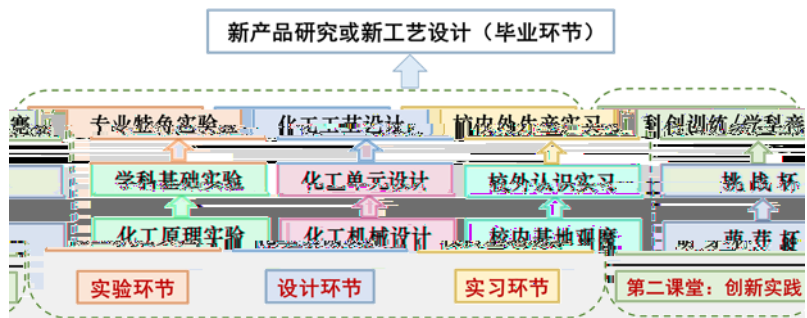
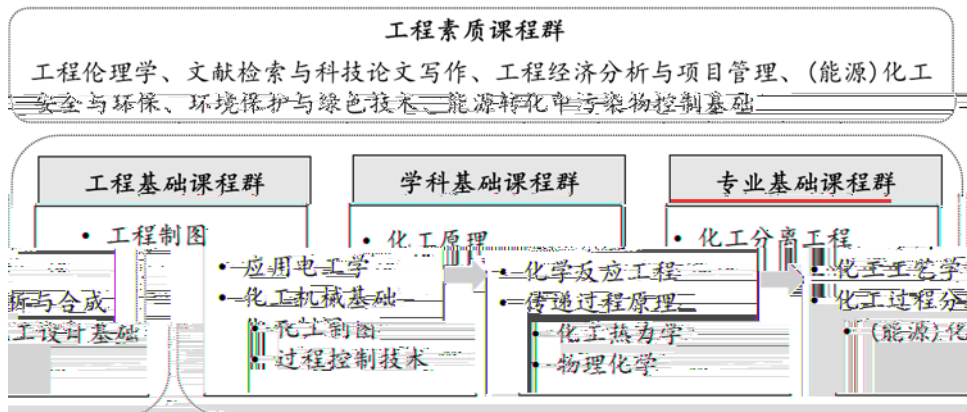
“ ”

Python

“ — — — ”

“ ”

“ — — ”



### 2.3



4.

3.

“ ”

3.1

3770 m<sup>2</sup>

“ - - - ”

17

76%

8

43% 29%



5.

3.2

2

2

30

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3.3

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- - -

Chem-E-Car

80%



6.

2017

43

25

360

12

1.

	2	2	
	2	2	
Chem-E-Car	1	“	” “SACHe”
Chem-E-Car			

4

3

MOOC



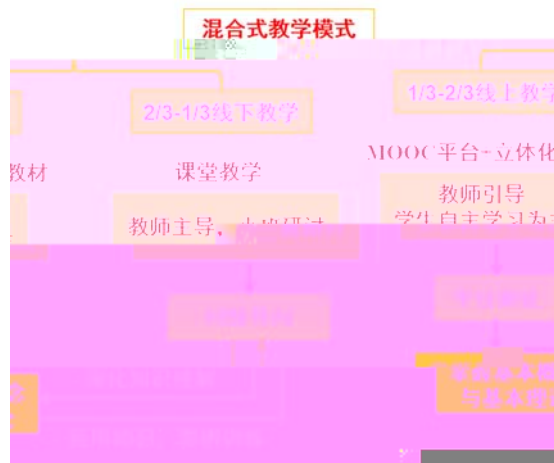
7.

“ ” “ ” “ ” “ ” “ ”

3

2.

	BOPPPS
	2021
	2021
	2019



8.

1

“123”

“ ”

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”4

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”1

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”2

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”3

“123”

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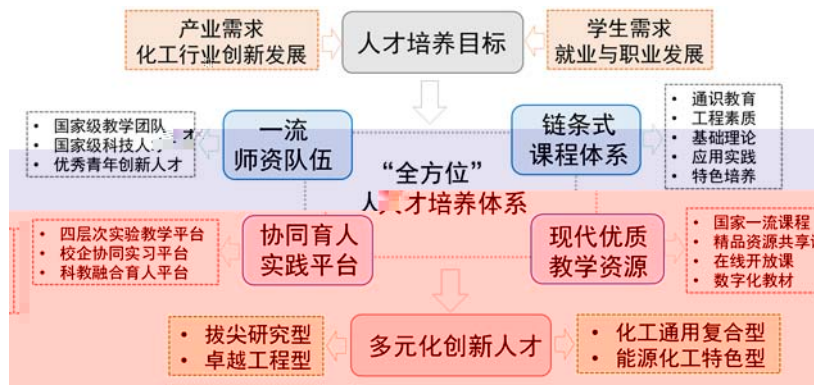
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9.

3

MOOC

“ ” “ ”

1

2

2

1

2

3

2

3

2017-2021

1320

98%

3.0

95%

3.5

91%



58%	45%	43	25
	360		2
2		2	Chem-E-
Car	Chem-E-Car		
2			

2017

20

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9.05

“ ” 2.21 “ ” 6100

8000

20

20

6.2

40

18.0

50

68.3