

Design and Technology
F.2 TEACHING SYLLABUS (2016-2017)

1st term

Topic (1) : Six-legs Robot Design

Week	Content	Activity	Assignment or Assessment
(1) Introduction	<ul style="list-style-type: none"> ✧ Introduce design project ✧ Requirements of design folio ✧ Competition guidelines ✧ Marking scheme 	Lecture	✧
(2) Exploration of six-legs robot	<ul style="list-style-type: none"> ✧ Kit-set robot assembly 	Workshop realization	Assessment: ✧ Assembly of robot
(3) Basic of mBot ✧ Hardware assembly ✧ Control interface	<ul style="list-style-type: none"> ✧ Explore the different I/O function of robot ✧ Perform task by wireless control (blue booth) 	Lecture & practice	Assignment: ✧ Software installation ✧ Hardware assembly
(4) Design process	<ul style="list-style-type: none"> ✧ Base design ✧ Legs design ✧ Outlook design 	Workshop realization	
(5) Design process	<ul style="list-style-type: none"> ✧ Working drawing ✧ Assembly drawing 	Workshop realization	Assignment: ✧ Design folio
(6) Design process: legs	<ul style="list-style-type: none"> ✧ Legs design (CAD) ✧ Production of the legs 	Workshop realization	✧
(7) Design process: legs	<ul style="list-style-type: none"> ✧ Production of the legs (3D-printing) 	Workshop realization	Assessment: ✧ Legs design

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Week	Content	Activity	Assignment or Assessment
(8) Design process: base	<ul style="list-style-type: none"> ✧ Base design (CAD) ✧ Production of the base 	Workshop realization	
(9) Design process: base	<ul style="list-style-type: none"> ✧ Production of the base 	Workshop realization	Assessment: <ul style="list-style-type: none"> ✧ Base design and production
(10) Electronic components	<ul style="list-style-type: none"> ✧ Understand the use of related electronic components ✧ Connection of components ✧ Electrical soldering skills 	Workshop realization	
(11) Computer-controlled method	<ul style="list-style-type: none"> ✧ Introduce <Scratch> ✧ Design controlling program by using <Scratch> 	<ul style="list-style-type: none"> ✧ lecture ✧ Practice 	
(12) Design process: outlook design	<ul style="list-style-type: none"> ✧ Production of the outlook design 	Workshop realization	Assessment: <ul style="list-style-type: none"> ✧ Outlook design and production
(13) Testing and modification	<ul style="list-style-type: none"> ✧ Testing ✧ Adjustment ✧ Modification Of the design product 	Workshop realization	Assessment: <ul style="list-style-type: none"> ✧ Final product
(14) Competition & evaluation	<ul style="list-style-type: none"> ✧ Robotic competition ✧ Course evaluation 	competition	Assessment: <ul style="list-style-type: none"> ✧ Function and performance

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2nd term

Topic (2) : Mechanical toy design

Week	Content	Activity	Assignment or Assessment
(1) Introduction	<ul style="list-style-type: none"> ✧ Introduce design project ✧ Requirements of design folio ✧ Marking scheme ✧ Underlying Scientific principle 	Lecture	
(2) Design process	<ul style="list-style-type: none"> ✧ Prototype production (paper base) 	Workshop realization	✧
(3) Design process	<ul style="list-style-type: none"> ✧ Prototype production and testing 	Workshop realization	Assessment: ✧ Functionality and skills
(4) Design process	<ul style="list-style-type: none"> ✧ Research ✧ Design ideas ✧ Final solution 	Workshop realization	Assignment: ✧ Design folio
(5) Design process	<ul style="list-style-type: none"> ✧ Working drawing ✧ Assembly drawing 	Workshop realization	Assignment: ✧ Design folio
(6) Design realization	<ul style="list-style-type: none"> ✧ Manipulation of tools and machine to produce design product 	Workshop realization	
(7) Design realization	<ul style="list-style-type: none"> ✧ Manipulation of tools and machine to produce design product 	Workshop realization	

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F.2 TEACHING SYLLABUS (2016-2017)

2nd term

Topic (2) : Mechanical toy design

Week	Content	Activity	Assignment or Assessment
(8) Design realization	✧ Manipulation of tools and machine to produce design product	Workshop realization	
(10) Design realization	✧ Manipulation of tools and machine to produce design product	Workshop realization	
(12) Design realization	✧ Manipulation of tools and machine to produce design product	Workshop realization	Assessment: ✧ Production skills and functionality
(13) Programming: <app Inventor>	✧ Introduce <app inventor> ✧ Design controlling program by using <app inventor>	✧ lecture ✧ Practice	
(14) Programming: <app Inventor>	✧ Design controlling program by using <app inventor>	✧ lecture ✧ Practice	
(15) Programming: <app Inventor>	✧ Assembly of design product	✧ lecture ✧ Practice	Assessment: ✧ Functionality
(16) Testing and modification	✧ Testing ✧ Adjustment ✧ Modification Of the design product	Workshop realization	Assessment: ✧ Final product