



PS5888 / CY2003 / EE5082 Briefing

5127

Praising Failure: James Dyson Talks Vacuum's 5,127 Prototypes

Jack Loftus
4/10/11 11:00AM

83

Save



Sir James Dyson, inventor of perhaps the most recognizable consumer vacuum on the market today, is completely comfortable with failure. He's good at it—failure I mean—but most great inventors are.

So it's with that in mind that we turn to Dyson's Wired column that was floating around this weekend. In it, Dyson breaks down the creative process that went into creating the bag-free, "cyclone technology" design, including the 15 years and 5,127 prototypes it took before the first model, DCo1, would ultimately prove successful in 1993.

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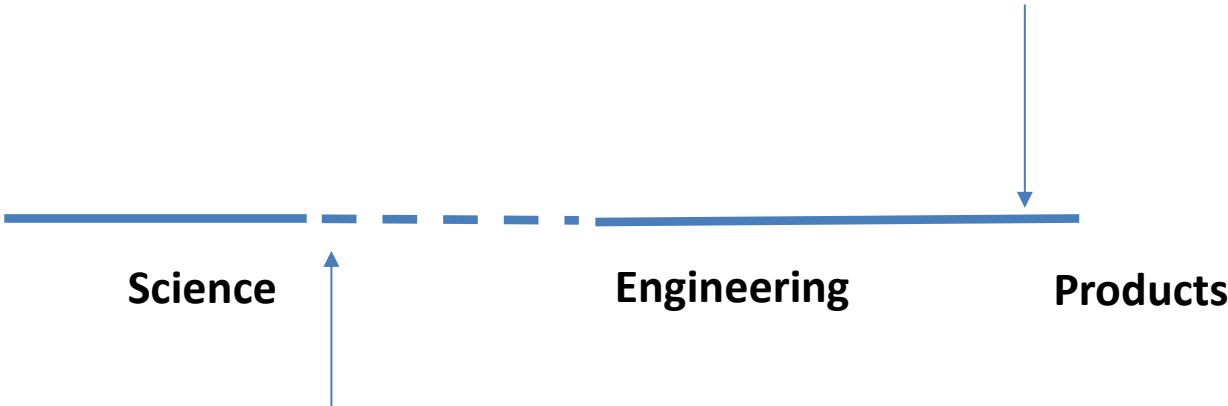
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Recent Video



<https://gizmodo.com/praising-failure-james-dyson-talks-vacuums-5-127-proto-5790556>



Design Thinking

System Thinking

PS5888 Briefing

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- Course Registration
- Planning for project and Timeline
- Equipment Available
- Budget
- Safety and Risk Assessment
- Personnel
- Hours of Operation
- Assessment

Roles and Responsibilities

- Group Leader
- Finance (Accounts) and Procurement
- Secretarial Support and Records
- Communications (Blog)
- Planning and Safety Officer

Some available software

Simulink, COMSOL, Matlab, Maple,
Solidworks; Fusion360

Tentative Timeline 2025

May

2025

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
28	29	30	01 May Day Holiday	02	03	04
05	06	07 1st draft Discussion (if exam is over)	08 1st draft Discussion (if exam is over)	09 2:30 - 3:30 pm Dyson Competition Talk	10	11
12	13 OLT - Sweden 13 - 23 May Bail Field trip 13 - 25 May	14 Workshops	15 Workshops	16 Workshops	17	18 OLT Japan 18 - 27 May
19 Project Consultations (Dr Ho: 5:30 - 7:00 pm)	20	21 OLT Korea 21 - 30 May Project Consultations (Dr Ho: 5:30 - 7:00 pm)	22 Project Consultations (11:30 am - 1:30 pm)	23 Deadline for Risk Assessments	24	25
26	27	28 OLT France 28 May - 8 Jun 1st Informal Progress Check (3:00 - 5:00 pm)	29 1st Informal Progress Check (3:00 - 5:00 pm)	30	31	01

June

2025

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
26	27	28	29	30	31	01
02	03 1st Informal Progress Check (1:00 - 5:00 pm)	04	05	06 Hari Raya Haji	07	08
09	10	11	12 1st Formal Presentation (9:30 am - 5:00 pm)	13	14	15
16	17	18	19 2nd Informal Progress Check (10:00 am - 5:00 pm)	20 2nd Informal Progress Check (10:00 am - 5:00 pm)	21	22
23	24	25	26	27	28	29

Tentative Timeline 2025

July

2025

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
30	01	02	03	04	05	06
07	08	09	10 2nd Formal Presentation (9:30 am - 5:00 pm)	11	12	13
14	15	16	17 3rd Informal Progress Check (10:00 am - 5:00 pm)	18 3rd Informal Progress Check (10:00 am - 5:00 pm)	19	20
21	22	23	24 Final Presentation / Viva (10:00 am - 5:00 pm)	25 Final Presentation / Viva (10:00 am - 5:00 pm)	26	27
28 Final Presentation / Viva (10:00 am - 5:00 pm)	29	30	31	01 a. Deadline for submission of Video and Poster b. Final updates of blog	02	03

August

2025

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
28	29	30	31	01	02	03
04 Freshmen Orientation	05 Freshmen Orientation	06 Freshmen Orientation	07 Freshmen Orientation	08 Freshmen Orientation	09 National Day	10
11 Week 1	12	13	14	15 M&T Exhibition + Thank you Dinner (9:30 am - 7:30 pm)	16 M&T Exhibition (9:30 am - 3:30 pm)	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

Assessment / Submission / Prizes

- A. Refer to rubrics for assessment
- B. Exhibition & Prizes
 - 1. Best Project Prize
 - 2. Most Innovative Idea Award
 - 3. Best Design and Craftsmanship
- C. Blog to journal research notes and progress etc
1 Aug 2025, 5 pm
- D. 1-2 minute video to advertise your project
4 Aug 2025, 5 pm
- E. 1 A1 Poster for the Exhibition
4 Aug 2025, 5 pm

Equipment Available

- Mechanical Tools
- Electronics Workshop
- 3D Printers
- Others

Budget

- Each group – up to \$300 for basic operations
- Small Purchases (<\$100)
- Large Purchases (>\$100) – discuss with me first
- Purchase of materials etc; more equipment, please discuss with advisor and myself. Budget of up to ~\$2000 can be provided on request.
- Take note that overseas purchase can take a few weeks/months for delivery
- More details on financial procedures will be updated.

Safety and Risk Assessment

- Safety Issues
- Examples
- Meet up with supervisors
- Work out Risk assessment by 24 May 2024 or before you start any work

<https://www.ntu.edu.sg/spms/research/safety>

<https://www.ntu.edu.sg/spms/research/safety/new-users>

<https://www.ntu.edu.sg/spms/research/safety/risk-assessment>

[https://www.ntu.edu.sg/docs/librariesprovider123/safety-documents/spms-safety-training-matrix-\(3-3\).pdf?sfvrsn=28e9f783_2](https://www.ntu.edu.sg/docs/librariesprovider123/safety-documents/spms-safety-training-matrix-(3-3).pdf?sfvrsn=28e9f783_2)

<https://www.ntu.edu.sg/spms/about-us/our-people/safety-it-and-facilities>

Personnel for M&T Lab

- Dr Ho Shen Yong (Coordinator)
- Mr Xu Yaoxiang (Lab Manager)
- Mr Leong Hanyang (Consultant)
- Mr Jason Lee (Consultant)
- Ms Eve Ng, Miss Roshini (Course Administrator)
- Ms Tam Qian Xin (Finance)
- Student helpers
- PhD students

At least one of the following must be in the lab when you are doing your project...

- Project Advisors ...
- Mr Xu Yaoxiang (Lab Manager)
- Abdul Rahman (Mechanical Workshop)
- Ms Tam Qian Xin (First Year Lab Manager);
- Seniors

Hours of Operation

Monday – Friday (except public holidays)

Normal Hours of Operation: 8:30 am – 5:30 pm

Extended Hours of Operation: (on request, 2 days advance notice required)

Weekdays: 5:30 pm – 9:00 pm