

TRƯỜNG ĐẠI HỌC VĂN LANG
KHOA KT CƠ-ĐIỆN VÀ MÁY TÍNH

ĐỀ THI/ĐỀ BÀI, RUBRIC VÀ THANG ĐIỂM
THI KẾT THÚC HỌC PHẦN
Học kỳ 3, năm học 2024-2025

I. Thông tin chung

Tên học phần:	Phân tích và đầu tư dự án		
Mã học phần:	71ELEC40583	Số tín chỉ:	3
Mã nhóm lớp học phần:	71K28CNDD01		
Hình thức thi: Tiểu luận	Thời gian làm bài:	7	Phút/ ngày
<input checked="" type="checkbox"/> Cá nhân	<input type="checkbox"/> Nhóm		

III. Nội dung đề bài

1. Đề bài:

- Trình bày các phương pháp phân tích tài chính dự án SPP, NPV, LCC, PI, IRR, điểm hoà vốn (break even point) cho ví dụ cụ thể.
- Oil spills in the Gulf of Mexico have been known to cause extensive damage to both public and private oyster grounds along the Louisiana and Mississippi shores. One way to protect shellfish along the shoreline is to release large volumes of fresh water from the Mississippi River to flush oil out to sea. This procedure inevitably results in death to some of the saltwater shellfish while preventing more widespread destruction to public reefs. Oil containment booms and other temporary structures can also be used to intercept floating oil before it damages sensitive fishing grounds. If the Fish and Wildlife Service spent \$110 million in year 0 and \$50 million in years 1 and 2 to minimize environmental damage from one particular oil spill, what is the benefit-to-cost ratio provided the efforts resulted in saving 3000 jobs valued at a total of \$175 million per year? Assume disbenefits associated with oyster deaths amounted to \$30 million in year 0. Use a 5-year study period and an interest rate of 8% per year.
- A project to extend irrigation canals into an area that was recently cleared of mesquite trees (a nuisance tree in Texas) and large weeds is projected to have a capital cost of \$2,000,000. Annual maintenance and operation costs will be \$100,000 per year. Annual favorable consequences to the general public of \$820,000 per year will be offset to some extent by annual adverse consequences of \$400,000 to a portion of the general public. If the project is assumed to have a 20-year life, what is the B/C ratio at an interest rate of 8% per year?
- Although the lower Rio Grande is regulated by the Elephant Butte Dam and the Caballo Reservoir, serious flooding has occurred in El Paso and other cities located along the

river. This has required homeowners living in valley areas near the river to purchase flood insurance costing between \$145 and \$2766 per year. To alleviate the possibility of flooding, the International Boundary and Water Commission undertook a project costing \$220 million to raise the levees along flood-prone portions of the river. As a result, 13,000 properties were freed of the federal mandate to purchase flood insurance. In addition, historical records indicate that damage to infrastructure will be avoided, which amounts to an average benefit of \$8,200,000 per year. If the average cost of flood insurance is \$460 per household per year, calculate the benefit-to-cost ratio of the levee-raising project. Use an interest rate of 6% per year and a 30-year study period.

5. In 2010, Brazil began construction of the Belo Monte hydroelectric dam on the Xingu River (which feeds the Amazon River). The project is funded by a consortium of investors and is expected to cost \$11 billion. It will begin producing electricity in 2015. Even though the dam will provide clean energy for millions of people, environmentalists are sharply opposed. They say it will devastate wildlife and the livelihoods of 40,000 people who live in the area to be flooded. Assume that the funding will occur evenly over the 5-year period from 2010 through 2014 at \$2.2 billion per year. The disbenefits are estimated to be \$100,000 for each displaced person and \$1 billion for wildlife destruction. Assume that the disbenefits will occur evenly through the 5-year construction period and anticipated benefits will begin at the end of 2015 and continue indefinitely. Use an interest rate of 8% per year to determine what the equivalent annual benefits must be to ensure a B/C ratio of at least 1.0.

6.

In the 1860s, General Mills Inc. and Pillsbury Inc. both started in the flour business in the Twin Cities of Minneapolis–St. Paul, Minnesota. In the decade of 2000 to 2010, General Mills purchased Pillsbury for a combination cash and stock deal worth more than \$10 billion and integrated the product lines. Food engineers, food designers, and food safety experts made many cost estimates as they determined the needs of consumers and the combined company's ability to technologically and safely produce and market new food products. At this point only cost estimates have been addressed—no revenues or profits.

Assume that the major cost estimates below have been made based on a 6-month study about two new products that could have a 10-year life span for the company. Use LCC analysis at the industry MARR of 18% to determine the size of the commitment in AW terms. (Time is indicated in product-years. Since all estimates are for costs, they are not preceded by a minus sign.)

Consumer habits study (year 0)	\$0.5 million
Preliminary food product design (year 1)	0.9 million
Preliminary equipment/plant design (year 1)	0.5 million
Detail product designs and test marketing (years 1, 2)	1.5 million each year
Detail equipment/plant design (year 2)	1.0 million
Equipment acquisition (years 1 and 2)	\$2.0 million each year
Current equipment upgrades (year 2)	1.75 million
New equipment purchases (years 4 and 8)	2.0 million (year 4) + 10% per purchase thereafter
Annual equipment operating cost (AOC) (years 3–10)	200,000 (year 3) + 4% per year thereafter
Marketing, year 2	\$8.0 million
years 3–10	5.0 million (year 3) and –0.2 million per year thereafter
year 5 only	3.0 million extra
Human resources, 100 new employees for 2000 hours per year (years 3–10)	\$20 per hour (year 3) + 5% per year
Phaseout and disposal (years 9 and 10)	\$1.0 million each year

2. Hướng dẫn thể thức trình bày đề bài:

- Font: Times New Roman
- Size: 13
- Trình bày đầy đủ các nội dung: bìa, mục lục, trả lời câu hỏi, tài liệu tham khảo
- Nộp file words (PDF) và ppt.

3. Rubric và thang điểm

Tiêu chí	Trọng số (%)	Tốt Từ 8 – 10 đ	Khá Từ 6 – dưới 8 đ	Trung bình Từ 5 – dưới 6 đ	Yếu dưới 5 đ
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Bố cục nội dung và định dạng hợp lý	20	Cân đối, hợp lý	Khá cân đối, hợp lý	Tương đối cân đối, hợp lý	Không cân đối, thiếu hợp lý
Đủ các nội dung thành phần	40	Đầy đủ các nội dung	Nội dung đạt đến 75%	Nội dung đạt đến 50%	Nội dung chưa đạt đến 50%
Lập luận từng nội dung	20	Hoàn toàn chặt chẽ, Logic	Khá chặt chẽ, Logic; còn sai sót nhỏ	Tương đối chặt chẽ, Logic; có sai sót quan trọng	Không chặt chẽ, Logic
Kết luận	20	Phù hợp	Khá phù hợp	Tương đối phù hợp	Không phù hợp/Thiếu sót

Ngày biên soạn:

Giảng viên biên soạn đề thi: Lê Nguyễn Hòa Bình

Ngày kiểm duyệt:

Người duyệt đề

TP. Hồ Chí Minh, ngày tháng năm 2025

Giảng viên ra đề