EFSP Auxiliary ESL Curriculum

Biotechnology English

Instructor guide for advanced ESL learners working in biotechnology

Audience: biotech scientists, translational researchers, assay-development teams, platform teams, program managers, alliance managers, business-development staff, and biotech executives

Focus: A high-level biotechnology English curriculum for platform science, assay design, translational evidence, biomarkers, IP, partnerships, investor updates, regulatory-adjacent planning, and scientific-business dialogue.

Designed for advanced ESL learners who already use professional English and need industry-specific terminology, realistic meetings, role-play pressure, careful pushback, and polished workplace outputs.

Teaching stance: this is language and workplace-communication training, not legal, medical, financial, safety, or regulatory advice. Instructors should connect every scenario to the learner's current company policies, local rules, and approved procedures.

Purpose and Course Logic

A high-level biotechnology English curriculum for platform science, assay design, translational evidence, biomarkers, IP, partnerships, investor updates, regulatory-adjacent planning, and scientific-business dialogue.

Core language challenge

Advanced learners do not only need vocabulary. They need the ability to ask which standard applies, who owns the decision, what evidence is sufficient, what risk is being accepted, and how to disagree without sounding vague, defensive, or reckless.

Each module trains a realistic workplace pressure point with role-specific terms, decision language, pushback practice, and a written output learners can adapt to their own work.

Course objectives

- Use biotechnology terminology accurately in meetings, written updates, handoffs, escalations, reviews, and client or stakeholder conversations.
- Turn vague requests into specific questions about evidence, owner, deadline, constraint, risk, and decision rights.
- Push back on unsafe, unsupported, noncompliant, unrealistic, or poorly scoped proposals while preserving professional trust.
- Handle realistic dialogues from the field, including conflict, uncertainty, documentation gaps, customer or stakeholder pressure, and cross-functional disagreement.
- Produce concise workplace outputs: briefing notes, escalation updates, meeting scripts, risk memos, decision records, and follow-up messages.

Instructor Module Plans

Module 1. Platform Technology and Scientific Thesis (90 minutes)

Explain platform promise without overstating translation to products.

Learners should be able to

- Use these terms accurately: platform, modality, proof of concept, translatability.
- Explain the workplace tension: The evidence supports specific models and indications, not every future use case.
- Respond professionally when a stakeholder says: Use the strongest possible investor language.
- Draft a usable platform evidence statement with facts, caveats, owner, and next step.

Customized scenario

Workplace pressure

A founder wants to describe the platform as broadly validated.

Use the strongest possible investor language.

The evidence supports specific models and indications, not every future use case.

Classroom sequence

1. Terminology drill: define each term, then use it in one sentence from the learner's own role.
2. Risk map: identify the stakeholder, the decision, the evidence gap, the operating constraint, and the cost of being wrong.
3. Pushback ladder: move from clarifying question to evidence-based objection to consequence to decision request.

4. Output lab: draft and revise a platform evidence statement.

Module 2. Assay Development and Reproducibility (90 minutes)

Discuss assay performance, variability, and limitations.

Learners should be able to

- Use these terms accurately: assay, sensitivity, specificity, reproducibility.
- Explain the workplace tension: Precision, sensitivity, specificity, controls, and reproducibility need review.
- Respond professionally when a stakeholder says: Say the assay works because the pilot was positive.
- Draft a usable assay readiness note with facts, caveats, owner, and next step.

Customized scenario

Workplace pressure

A partner asks whether a biomarker assay is ready for decision-making.

Say the assay works because the pilot was positive.

Precision, sensitivity, specificity, controls, and reproducibility need review.

Classroom sequence

1. Terminology drill: define each term, then use it in one sentence from the learner's own role.
2. Risk map: identify the stakeholder, the decision, the evidence gap, the operating constraint, and the cost of being wrong.
3. Pushback ladder: move from clarifying question to evidence-based objection to consequence to decision request.
4. Output lab: draft and revise a assay readiness note.

Module 3. Biomarkers and Translational Strategy (90 minutes)

Connect preclinical signals to patient selection and clinical hypotheses.

Learners should be able to

- Use these terms accurately: biomarker, patient stratification, surrogate endpoint, validation.
- Explain the workplace tension: Biological plausibility, patient relevance, and validation status are different.
- Respond professionally when a stakeholder says: Make the biomarker the centerpiece of the clinical story.
- Draft a usable biomarker caveat memo with facts, caveats, owner, and next step.

Customized scenario

Workplace pressure

A team wants to use a biomarker as the main development rationale.

Make the biomarker the centerpiece of the clinical story.

Biological plausibility, patient relevance, and validation status are different.

Classroom sequence

1. Terminology drill: define each term, then use it in one sentence from the learner's own role.
2. Risk map: identify the stakeholder, the decision, the evidence gap, the operating constraint, and the cost of being wrong.
3. Pushback ladder: move from clarifying question to evidence-based objection to consequence to decision request.

4. Output lab: draft and revise a biomarker caveat memo.

Module 4. Preclinical Data Packages (90 minutes)

Describe animal, in vitro, and tox findings with appropriate caution.

Learners should be able to

- Use these terms accurately: in vitro, in vivo, toxicity, safety margin.
- Explain the workplace tension: Model relevance, dose, exposure, safety margin, and limitations must be named.
- Respond professionally when a stakeholder says: Say the model predicts human response.
- Draft a usable preclinical evidence summary with facts, caveats, owner, and next step.

Customized scenario

Workplace pressure

A board member asks whether animal data prove human efficacy.

Say the model predicts human response.

Model relevance, dose, exposure, safety margin, and limitations must be named.

Classroom sequence

1. Terminology drill: define each term, then use it in one sentence from the learner's own role.
2. Risk map: identify the stakeholder, the decision, the evidence gap, the operating constraint, and the cost of being wrong.
3. Pushback ladder: move from clarifying question to evidence-based objection to consequence to decision request.
4. Output lab: draft and revise a preclinical evidence summary.

Module 5. CMC and Scale-Up in Biotech (90 minutes)

Explain manufacturing feasibility before process maturity is complete.

Learners should be able to

- Use these terms accurately: CMC, yield, comparability, tech transfer.
- Explain the workplace tension: Yield, process control, comparability, and supply-chain risk are unresolved.
- Respond professionally when a stakeholder says: Assure investors that scale-up will be simple.
- Draft a usable scale-up risk update with facts, caveats, owner, and next step.

Customized scenario

Workplace pressure

A program lead wants to promise rapid scale-up after financing.

Assure investors that scale-up will be simple.

Yield, process control, comparability, and supply-chain risk are unresolved.

Classroom sequence

1. Terminology drill: define each term, then use it in one sentence from the learner's own role.
2. Risk map: identify the stakeholder, the decision, the evidence gap, the operating constraint, and the cost of being wrong.
3. Pushback ladder: move from clarifying question to evidence-based objection to consequence to decision request.

4. Output lab: draft and revise a scale-up risk update.

Module 6. IP, Freedom to Operate, and Collaboration (90 minutes)

Use careful language around patents and partner boundaries.

Learners should be able to

- Use these terms accurately: IP, freedom to operate, material transfer agreement, publication rights.
- Explain the workplace tension: Confidentiality, background IP, publication rights, and freedom to operate matter.
- Respond professionally when a stakeholder says: Share the materials to keep the relationship warm.
- Draft a usable collaboration boundary response with facts, caveats, owner, and next step.

Customized scenario

Workplace pressure

A collaborator requests broad access to unpublished methods.

Share the materials to keep the relationship warm.

Confidentiality, background IP, publication rights, and freedom to operate matter.

Classroom sequence

1. Terminology drill: define each term, then use it in one sentence from the learner's own role.
2. Risk map: identify the stakeholder, the decision, the evidence gap, the operating constraint, and the cost of being wrong.
3. Pushback ladder: move from clarifying question to evidence-based objection to consequence to decision request.
4. Output lab: draft and revise a collaboration boundary response.

Module 7. Investor and Board Updates (90 minutes)

Translate science into milestone, runway, risk, and decision language.

Learners should be able to

- Use these terms accurately: milestone, runway, inflection point, risk mitigation.
- Explain the workplace tension: Credibility requires clear milestones, risks, assumptions, and mitigation.
- Respond professionally when a stakeholder says: Remove uncertainties from the update.
- Draft a usable investor-ready milestone update with facts, caveats, owner, and next step.

Customized scenario

Workplace pressure

The board wants a clean milestone story before a financing round.

Remove uncertainties from the update.

Credibility requires clear milestones, risks, assumptions, and mitigation.

Classroom sequence

1. Terminology drill: define each term, then use it in one sentence from the learner's own role.
2. Risk map: identify the stakeholder, the decision, the evidence gap, the operating constraint, and the cost of being wrong.
3. Pushback ladder: move from clarifying question to evidence-based objection to consequence to decision request.

4. Output lab: draft and revise a investor-ready milestone update.

Module 8. Partnering and Business Development (90 minutes)

Discuss deal value without losing scientific caveats.

Learners should be able to

- Use these terms accurately: term sheet, option, exclusivity, due diligence.
- Explain the workplace tension: Diligence, territory, field, economics, governance, and data rights need definition.
- Respond professionally when a stakeholder says: Agree quickly before they lose interest.
- Draft a usable partnering negotiation brief with facts, caveats, owner, and next step.

Customized scenario

Workplace pressure

A potential partner wants exclusive rights after limited data review.

Agree quickly before they lose interest.

Diligence, territory, field, economics, governance, and data rights need definition.

Classroom sequence

1. Terminology drill: define each term, then use it in one sentence from the learner's own role.
2. Risk map: identify the stakeholder, the decision, the evidence gap, the operating constraint, and the cost of being wrong.
3. Pushback ladder: move from clarifying question to evidence-based objection to consequence to decision request.
4. Output lab: draft and revise a partnering negotiation brief.

Nomenclature and Jargon

These are classroom working definitions. Learners should adapt wording to their organization's policies, systems, and local regulatory environment.

Platform Technology and Scientific Thesis

Term	Working meaning
platform	Working biotechnology term used in platform technology and scientific thesis; define the owner, evidence source, governing document, risk, and decision impact before using it in a meeting.
modality	Working biotechnology term used in platform technology and scientific thesis; define the owner, evidence source, governing document, risk, and decision impact before using it in a meeting.
proof of concept	Working biotechnology term used in platform technology and scientific thesis; define the owner, evidence source, governing document, risk, and decision impact before using it in a meeting.
translatability	Working biotechnology term used in platform technology and scientific thesis; define the owner, evidence source, governing document, risk, and decision impact before using it in a meeting.

Assay Development and Reproducibility

Term	Working meaning
assay	Working biotechnology term used in assay development and reproducibility; define the owner, evidence source, governing document, risk, and decision impact before using it in a meeting.

Term	Working meaning
sensitivity	Working biotechnology term used in assay development and reproducibility; define the owner, evidence source, governing document, risk, and decision impact before using it in a meeting.
specificity	Working biotechnology term used in assay development and reproducibility; define the owner, evidence source, governing document, risk, and decision impact before using it in a meeting.
reproducibility	Working biotechnology term used in assay development and reproducibility; define the owner, evidence source, governing document, risk, and decision impact before using it in a meeting.

Biomarkers and Translational Strategy

Term	Working meaning
biomarker	Working biotechnology term used in biomarkers and translational strategy; define the owner, evidence source, governing document, risk, and decision impact before using it in a meeting.
patient stratification	Working biotechnology term used in biomarkers and translational strategy; define the owner, evidence source, governing document, risk, and decision impact before using it in a meeting.
surrogate endpoint	Working biotechnology term used in biomarkers and translational strategy; define the owner, evidence source, governing document, risk, and decision impact before using it in a meeting.
validation	Working biotechnology term used in biomarkers and translational strategy; define the owner, evidence source, governing document, risk, and decision impact before using it in a meeting.

Preclinical Data Packages

Term	Working meaning
in vitro	Working biotechnology term used in preclinical data packages; define the owner, evidence source, governing document, risk, and decision impact before using it in a meeting.
in vivo	Working biotechnology term used in preclinical data packages; define the owner, evidence source, governing document, risk, and decision impact before using it in a meeting.
toxicity	Working biotechnology term used in preclinical data packages; define the owner, evidence source, governing document, risk, and decision impact before using it in a meeting.
safety margin	Working biotechnology term used in preclinical data packages; define the owner, evidence source, governing document, risk, and decision impact before using it in a meeting.

CMC and Scale-Up in Biotech

Term	Working meaning
CMC	Working biotechnology term used in cmc and scale-up in biotech; define the owner, evidence source, governing document, risk, and decision impact before using it in a meeting.
yield	Working biotechnology term used in cmc and scale-up in biotech; define the owner, evidence source, governing document, risk, and decision impact before using it in a meeting.
comparability	Working biotechnology term used in cmc and scale-up in biotech; define the owner, evidence source, governing document, risk, and decision impact before using it in a meeting.
tech transfer	Working biotechnology term used in cmc and scale-up in biotech; define the owner, evidence source, governing document, risk, and decision impact before using it in a meeting.

IP, Freedom to Operate, and Collaboration

Term	Working meaning
IP	Working biotechnology term used in ip, freedom to operate, and collaboration; define the owner, evidence source, governing document, risk, and decision impact before using it in a meeting.
freedom to operate	Working biotechnology term used in ip, freedom to operate, and collaboration; define the owner, evidence source, governing document, risk, and decision impact before using it in a meeting.
material transfer agreement	Working biotechnology term used in ip, freedom to operate, and collaboration; define the owner, evidence source, governing document, risk, and decision impact before using it in a meeting.
publication rights	Working biotechnology term used in ip, freedom to operate, and collaboration; define the owner, evidence source, governing document, risk, and decision impact before using it in a meeting.

Investor and Board Updates

Term	Working meaning
milestone	Working biotechnology term used in investor and board updates; define the owner, evidence source, governing document, risk, and decision impact before using it in a meeting.
runway	Working biotechnology term used in investor and board updates; define the owner, evidence source, governing document, risk, and decision impact before using it in a meeting.
inflection point	Working biotechnology term used in investor and board updates; define the owner, evidence source, governing document, risk, and decision impact before using it in a meeting.
risk mitigation	Working biotechnology term used in investor and board updates; define the owner, evidence source, governing document, risk, and decision impact before using it in a meeting.

Partnering and Business Development

Term	Working meaning
term sheet	Working biotechnology term used in partnering and business development; define the owner, evidence source, governing document, risk, and decision impact before using it in a meeting.
option	Working biotechnology term used in partnering and business development; define the owner, evidence source, governing document, risk, and decision impact before using it in a meeting.
exclusivity	Working biotechnology term used in partnering and business development; define the owner, evidence source, governing document, risk, and decision impact before using it in a meeting.
due diligence	Structured review of facts, risks, financials, operations, obligations, or claims before a decision.

Industry-Specific Meeting Moves

Situation	Useful language
Platform Technology and Scientific Thesis	Before we commit, I want to confirm platform, modality, the owner, and the evidence behind the decision. If the evidence supports specific models and indications, not every future use case., I recommend we document the risk and agree on the next step.
Assay Development and Reproducibility	Before we commit, I want to confirm assay, sensitivity, the owner, and the evidence behind the decision. If precision, sensitivity, specificity, controls, and reproducibility need review., I recommend we document the risk and agree on the next step.
Biomarkers and Translational Strategy	Before we commit, I want to confirm biomarker, patient stratification, the owner, and the evidence behind the decision. If biological plausibility, patient relevance, and validation status are different., I recommend we document the risk and agree on the next step.

Situation	Useful language
Preclinical Data Packages	Before we commit, I want to confirm in vitro, in vivo, the owner, and the evidence behind the decision. If model relevance, dose, exposure, safety margin, and limitations must be named., I recommend we document the risk and agree on the next step.
CMC and Scale-Up in Biotech	Before we commit, I want to confirm CMC, yield, the owner, and the evidence behind the decision. If yield, process control, comparability, and supply-chain risk are unresolved., I recommend we document the risk and agree on the next step.
IP, Freedom to Operate, and Collaboration	Before we commit, I want to confirm IP, freedom to operate, the owner, and the evidence behind the decision. If confidentiality, background ip, publication rights, and freedom to operate matter., I recommend we document the risk and agree on the next step.
Investor and Board Updates	Before we commit, I want to confirm milestone, runway, the owner, and the evidence behind the decision. If credibility requires clear milestones, risks, assumptions, and mitigation., I recommend we document the risk and agree on the next step.
Partnering and Business Development	Before we commit, I want to confirm term sheet, option, the owner, and the evidence behind the decision. If diligence, territory, field, economics, governance, and data rights need definition., I recommend we document the risk and agree on the next step.

High-pressure pushback frames

- I understand the urgency. The risk is that we move faster than the evidence or process supports.
- I am not blocking the goal. I am naming the condition we need before the decision is safe and credible.
- If we accept this risk, we should name the owner, document the assumption, and define the trigger for escalation.
- That may be possible, but not under the current scope, timeline, or approval path.
- Let's separate what we know, what we assume, and what still needs confirmation.

Assessment and Coaching

Performance rubric

Skill	Developing	Proficient	Strong
Terminology	Recognizes terms but uses them loosely.	Uses field terms accurately in context.	Defines terms, connects them to evidence, and explains decision impact.
Pushback	Disagrees vaguely or avoids disagreement.	Names concern with evidence and next step.	Balances urgency, relationship, risk, owner, and decision rights.
Scenario judgment	Focuses on one stakeholder's preference.	Identifies constraint, risk, and process.	Guides the group toward a documented, realistic decision.
Written output	Writes general summaries.	Produces clear notes with facts and owner.	Creates concise, decision-ready workplace communication.

Source orientation

- Company scientific records and approved investor materials.
- Patent counsel and confidentiality agreements.
- Current regulatory and quality guidance relevant to the product type.
- The learner's own company policies, SOPs, contracts, systems, templates, and approved communication standards.